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THE
CONCEPT ACTION IN HISTORY
AND IN
THE NATURAL SCIENCES

BY
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INTRODUCTION

The title of this essay suggests a certain antithesis between history and the natural sciences. This antithesis, which is maintained in Germany and France much more commonly than here or in England, I intend to set out along lines that seem to me somewhat more clear, at least to English-speaking people, than those adhered to by German logicians. The gain results, in my opinion, largely from our possession, in the common word and concept *action*, of an instrument of speech and logic to which no German term, in its common use, is equal for this particular purpose.

To establish this antithesis is to exhibit the independence and importance of historical science proper, as contrasted with sociology, with political or any other science that notes "uniformities of sequence or co-existence." In their efforts to bring home to all the existence of historical science, and to exhibit its peculiar purpose and value, such men as Kant, Hegel, Droysen, Windelband, Münsterberg and Rickert have insisted that it is through the appreciation of the nature of historical construction that the common thought of the times can free itself from the tendency wrongly to employ mechanical concepts, to rest in fatalism and individualism, to neglect or even positively to scorn all those deeper interpretations of the world, which, escaping or transcending the demands of a science of *law*, serve to substantiate Bacon's dictum that it is through histories, rather than through natural science, that men become wise.

But, until we can set over and against the purpose and ideal of natural science, against the definite concept of *law*, a no less definite and complete concept, purpose and ideal of historical science, the impression must remain common that the eulogies of that science are marked rather by fervor and fine speaking than by the clear thinking and residence with the fact on which the naturalist insists, and which, in large measure, he has attained. In the concepts of teleology, individuality and freedom, by which the above-mentioned writers and others have defined the nature of historical construction, there may lie the whole truth which they sought. But it is certain that no general acceptance has been gained for any of the accounts yet given of the nature of history. The latest and clearest is that of Professor Heinrich Rickert, in *Die Grenzen der Naturwissenschaftlichen Begriffsbildung*. But even this, I think, in asserting the bold antithesis of the sciences of *individuals* and of *universals*, fails to grasp the wealth and positive character of the historian's work, or really to unite under one concept the full purpose of historical as contrasted with naturalistic construction.

My thesis is, that to describe the content and purpose of historical construction the concept *action* is fully adequate. And I have the less sense of temerity in advancing this theory, that I feel my position is really in close touch with those above mentioned; and particularly with that of Droysen, a practical historian, a philosopher and a logician. *Action*, then, as contrasted with *Law* is to be the central theme of this essay.

The plan of this essay is as follows: First, by tracing the history of the attempt to establish the logical basis of historical science, I introduce my own theory as a development of those preceding. Then, in chapters II and III, I intend to show, inductively, that action *is* the concept of historical content and construction, and also, deductively, starting from the most obvious character of history, that action *must* be that concept. Chapters IV and V would show that the constant drift of natural sciences towards mechanical science proper is the elimination of the historical element in the concrete *facts* from which those sciences start; that those concrete *facts* are actions, but that natural science, in seeking laws, eliminates the conception of action; and that the elimination of action is the elimination of qualitative differences.

Chapter VI answers some logical difficulties and propounds others; in general, it *outlines* the field of the logic of history so far as I have surveyed it. Chapter VII exhibits the great significance of historical science for ethics. History furnishes the proper material of ethics. To neglect history is to have a formal ethics; to neglect the wider constructions of historical science is to have a petty ethical perspective.

CHAPTER I

THE DISTINCTION BETWEEN THE SCIENCE OF HISTORY AND THE NATURAL SCIENCES

1. EARLIER THEORIES ON THE SUBJECT. DROYSEN.—2. LATER THEORIES.—3. ACTION AS THE DISTINGUISHING CONCEPT OF HISTORY.—4. A COMPARISON OF THIS THEORY WITH RICKERT'S.

1. With few exceptions, English and American historians and logicians seem to have overlooked the significance of the problem here proposed.[1] So, to focus the attention of the reader, I submit this simple but important aspect of the question.

In any history, as, *e. g.*, of the United States, there are massed a vast number of facts; some only implied, others definitely given. Each of these facts is itself a history. For example, the surrender at Saratoga is one history; the "Missouri Compromise" is another. And each of these, in turn, is composed of many histories, whether the latter are written out in full or not.

The history of the United States, then, is counted one thing, which is a combination of many lesser things. The historian, in his combination of the many histories into the one, seeks to discover and record the *actual* combination of many facts, or histories, into one fact or history; for the unity is not merely his invention.

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[1] See, however, the address of Professor Burgess before the Amer. Historical Assoc. (*Annual Report*, 1896, vol. 1, pp. 201-219), and Professor Flint's summary of the recent discussion of the subject, Am. Hist. Rev., Oct., 1903.

On and by what principle are such combinations traced? The sociologist brings unity to the several histories, small or great, which the development of a society presents, by using the principle of generalization. But the historian, though he does indeed state that the several lesser histories have the common character of being parts of one and the same whole, yet has for his purpose the presentation of that whole, with the parts appearing each in the particular, unique place that pertains to it.

In Herodotus's history there is, as Rawlinson in his introduction thereto puts it, a *unity of action*. There are many lesser actions united in the greater, *i. e.*, in the general course of the Persian war; although many actions appear in the work not because they are parts of that one, but because they have an interest of their own and are accidentally related to the main action. Thucydides, however, adheres strongly to this unity of action. In his introductory chapter we have a fine picture of the single complex process by which Greek became differentiated from Barbarian, and in Greece, Spartan from Athenian. Hobbes, in the introduction to his translation, admires the art with which Thucydides preserves the unity of action, the *oneness* of the war, treating the parts as parts throughout, instead of writing, as it were, "many histories," which then had been in need of "sowing together.' But Hobbes did not definitely perceive that the historian employs a distinct method of organizing facts. History, he says, is a mere "register of fact," nothing but sense and memory; it requires no reasoning, for it is not a compilation or organization of fact! (*Leviathan*, chap. ix.)

This apparent blindness to the character of the historian's work appeared, too, in Aristotle. He refers, I believe, never to Thucydides, but frequently to the less methodical Herodotus, to exemplify history. He speaks of it as concerned only with the particular, and therefore as a less "philosophical," a less high or serious pursuit than poetry. (*Poetics*, 1451, b. 4; *Problemata*, 916, b. 8.) In chapter VII I shall try to show how this failure to grasp the aim and concept of history affected the ethics of Aristotle.

In Leibnitz, it is possible to see, I believe, in his insistence on the free development of monads, for each of which the universe possesses an absolute unity, the *historical* counterpart to that other side of his teaching, which may fairly be called the *naturalistic*, in which the monads *appear* reciprocally to determine each other in space. But I cannot work out this thought here.

Kant, after laying down the postulates of the *mechanical* sciences in the *Critique of Pure Reason*, exhibits in his *Critique of Judgment* and in his *Idee zu einer allgemeinen Geschichte in weltburgerlicher Absicht* the principles of *teleological* science. Teleology may, he says, refer to the purposiveness in an object relative to the observer; but, as a matter of science, it concerns the purposive relation of the parts of the object to each other and to the whole. Objects in which this latter relation is found are "natural purposes." Such are not only all living things but also nations, and, indeed, humanity and nature itself. In his *Idee* above mentioned it is shown how all men are one in virtue of a tendency that lies in humanity to constitute a world-federation, a federation that must, because of the nature of man himself, tend continually to include the whole race. The race reproduces itself in the fulfilment of this purpose, and all its parts are in this relation reciprocally means and ends to each other and the whole. Therefore, the race is a "natural purpose"; a term which, to my mind, is practically equivalent to that clearer and more common term, agent, which best marks the object of history. And though Kant wrongly limited the term history to human political history, he in fact laid down the general principles of historical as contrasted with mechanical or natural science.

In Herder we see a tendency to break away from the conception of man as isolated through the possession of reason from the rest of nature. Brutes are men's "elder brothers." But, though Herder insists on the presence of "organic powers" and internal, as contrasted with mechanical causation, and thus retains the material of historical science, yet he has no idea of a distinct historical method.[2] His "philosophy of history" covers indiscriminately both economic laws and also the unity of peoples or of the race itself in the light of its unique development.

To discuss Hegel's account of historical science would unduly lengthen this chapter. I venture to attribute his restriction of history to the affairs of states to the impossibility, in his day, of foreseeing an exact, detailed record of the development of nature, such as we possess.[3] He emphasizes more than did Kant the freedom which distinguishes the agent of history from the atom, the object of external necessity. He attempted to answer Kant's demand for a philosophy of history that would show how mankind has in fact worked towards the realization of reason, but maintained that freedom is the form of that realization.

It is from Hegel that Droysen learned his logic of history. Droysen is the first who contrasts historical science with that form of natural science with which history is most likely to be confused, viz., sociology. His *Elevation of History to the Rank of Science*[4] appeared in 1852, in answer to Buckle's *History of Civilization in England.* The latter work had arraigned the incoherence of histories. Because he could find in histories few discoveries of the *laws* of the human mind under natural or social conditions, Buckle could see in histories no *science*, and none but a literary synthesis of materials.

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[2] See his *Ideen zur Philosophie der Geschichte der Menschheit.*

[3] *Cf.* p. 63, Hegel's *Philosophy of History,* Bohn's edition.

[4] For Droysen's works on this subject, I refer to the pages of Andrews' translation, *Outline of the Principles of History,* Ginn & Co., 1897.

Droysen's reply was not effective, because it assumed in his readers more knowledge of the subject than they had. But in his *Outlines*, his *Nature and History*, and the work just mentioned may be found latent almost all that since has been advanced towards a logic of history. His readers, in too many cases, seem to have supposed he meant to deny the existence of laws in the realm of human will.

History, he says (pp. 9, 10), deals with objects that do not simply repeat themselves, but *advance*, continually developing what was potential in them to something actual and new (pp. 98, 99). Thus engaged, it presents in its several fields a succession, and must seek, for its final material, an endless succession, and an ever-advancing object. Therefore, it transcends the perishable individual man, exhibiting those "partnerships" (p. 36) into which men enter, which caused them, which they are, and which they in turn make. In these "partnerships" greater and more enduring unities are continually discovered. Humanity is the greatest of them (pp. 10, 48). Its advance is towards a knowledge of itself (pp. 48, 49).

Such "partnerships," *e. g.*, marriage, the family, the Church, the State, humanity, constitute together the moral world, the field of history. Through these greater unities the individual men that constitute them can attain the realization of their own highest nature (pp. 74-77). Therefore, the union is a *free* one in proportion as men become conscious of this fact of reciprocal aid.

History, therefore, deals with free, "self-progressing"[5] objects, and historical science determines in what unities or syntheses such objects appear.

I would criticize Droysen's treatment on two grounds: the first, that he wrongly marks off the history of the moral world from histories in general, as history's peculiar field. *There is one concept common to all histories.* The history of the earth, with which the geologist may deal, is history in its own right, not merely because of its relation to the history with which the historian of "moral partnerships" may deal. And the second, that he keeps in the background the essential feature that gave unity to his treatment, the fact that history deals with objects as determined from within by latent tendencies, with activity, with agencies and actions, not with objects void of character, determined by circumstances, by their relations, not with passivity, not with atoms and motion. Indeed, had he remedied either of these defects, he could hardly have failed, it seems to me, to have proceeded to correct the other.

2. Two conceptions of history I shall now advance that seem to me valuable, to be sure, for their truth, but also for the questions raised by what I take to be their errors. Schopenhauer maintained not only that history does not seek laws, but also that, not seeking laws, dealing only with the unique,[6] the never recurring, history is "Wissen," in-

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[5] Adopting a phrase suggested by Prof. Burgess in the address already mentioned.

[6] M. Xénopol (*Les principes fundamentaux de l'histoire*, and *Caractère de l'histoire*, an article appearing in the *Revue philosophique*, January, 1904) adopts this element of *uniqueness* as the distinguishing mark of historical material. He fails, however, to indicate the *positive* aim of historical science. Surely it does not simply aim to present the unique as unique; that would hardly be worth while, unless history

deed, but cannot be "Wissenschaft." He denies, of course, the existence of those continually advancing agencies of which Droysen wrote. History is at bottom ever the same. Whoever has read Herodotus may save himself the sorrow of reading further. But though history tells of the same, yet it tells it otherwise; *eadem sed aliter.*

Whether history does present ever the same character or whether it presents a continuous advance of some kind is a question of fact. We are sure, at any rate, that certain men of much talent have tried to present histories in which there appeared continuous advance in character in things that remained in some sense identical. We shall see that such constructions so enter into all our thinking that to deny to them some accordance with reality would be hardly less absurd than to deny the existence of uniformities of co-existence and sequence in the real world. We must admit, then, that there is a science, or at least a pseudo-science, of considerable practical interest, that is known as history. We have to determine as exactly as possible its concept.

Professor Münsterberg has taken the somewhat paradoxical position that the science of history deals, not with law, not with causal connections, *not even with a temporal series,* but with the interrelation of human volitions. Thus, when we assert that Socrates' decision to stay in prison was a

is a mere handmaid to other sciences, the discoverer of the facts with which they may deal. It would be possible to take this latter point of view, but it is far from M. Xénopol to do so. He is much aggrieved, apparently, that the sociologist should seek to present "laws of development" within the realm of historical fact, except in the field of primitive human history. But if there, why not everywhere? M. Xénopol, because he fails to see the positive character of historic construction, which make the historian a scientist in his own right, regardless of what laws the sociologist or geologist may discover, is supersensitive to the perfectly legitimate "incroachments" of such sciences.

decision to obey the laws of Athens unto death, or when a German, by asserting his nationality, means thereby to assert his conformity with the " will-influences " of Goethe and Beethoven, Kant and Hegel, Luther and Bismarck, these are historical constructions, examples of historical science. " It is the unique task of history as a science to work out and make complete this teleological system of individual will-relations, to bring out the connection between our acts and all the acts which we must acknowledge as somehow influencing our own." [7] History has to find out those will-influences that determined the multitude which imitated, acknowledged, affirmed them, or the contrary. The most complete historical synthesis would present the history of the world as determined by one will. This would be its ultimate " generality."

Professor Münsterberg here insists, fundamentally, that history is the science of freedom. By the psychological, as well as by the physiological account of Socrates' decision, he appears causally determined, unfree. But it is a fact, as Socrates himself says,[8] that he *freely* " chose the better and nobler part, to undergo any punishment which the state inflicts." Socrates and Münsterberg agree further that both these aspects of the matter are true; but the latter believes that, if he would avoid confusion, the historian must, " at least in principle," keep sacred for his sole material the freedom of such decisions. But, as a fact, history seems, without any confusion, to embrace both aspects. Socrates, in freely resolving to stay, resolved to stay bound by chains that, under natural laws, cohered and pressed down, and to stay subject to the inevitable effect of the hemlock upon his body. Kant and Hegel, Droysen and Rickert, are at one in opposing to Münsterberg's absolute elimination from history of time and cause the other conception that, in historical science, the mechanical appears as subsidiary to the teleological, not as opposed to, and not as excluded by it.

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[7] *Psychology and Life*, pp. 211, 214, 215, 220. *Cf. Grundzüge der Psychologie.*

[8] Phaedo, 98, 99.

3. The concept which should express this realm of history and the purpose of historical science is action. This notion of action, of doing, as opposed to passion, mere recipiency, I believe to be the common-sense view of things, a point that I shall develop later. I mean that our *primary* explanations of events are in terms of a potentiality, a tendency *within* the individual which is the cause of what that thing has done. The apple falls from the tree because it *has* weight; the boy became a good citizen *primarily* because he *had* the *power* to become one. In the fulfilling of those tendencies both apple and boy *did* something, acted. It requires a degree of sophistication to see that either is to be explained in categories of external influence, of mechanical necessity, even in part.

Histories take note of the fact that while in certain aspects a thing is passive in respect to its environment, or else reduces that to a condition of passivity in certain respects, in yet other ways a thing may enter into association with a limited portion of its environment in such a manner that the primary category of activity is retained both by the thing and by that limited environment. Then we have a union of agents within one agent, viz., the total limited environment just mentioned. It is thus that a cell is active in an organ and an organ in an organism; it is thus that a citizen is active in his village and his village in the state; it is thus that a scholar is active in his university and his university in the world of learning. The detection and presentation of such associations, such syntheses of agents within agents, in the teleological relationship essential to a synthesis of agents, is the purpose of historical science. And that purpose is effected by the discovery and presentation of the corresponding actions.

The content of any history is fundamentally that *action* which characterizes the one agent, and in which the lesser agents appear as members of that one agent. The actions of those lesser agents are histories, and together make up the one action and the one history.

This concept action indicates, at once, the vast extent of the term history, covering as it does all past events of which there is record—the step of a dinosaur on a mesozoic shore, the signing of a check or a treaty, the course of a comet or of a reform movement. It denotes the freedom which so often has been noted as characterizing the objects of history; also the form of the relation between the elements of any given history, for that relation is fundamentally one in which the activity of the elements is not only conserved, but increased. It indicates, therefore, the purpose and point of view of the historical scientist in his constructions. And, finally, it permits the temporal character which common usage gives to history, and the inclusion of mechanical relations between the several elements, subordinated to the teleological relation which the history aims to present.

The proof of this position occupies the rest of this essay; but I hope to secure provisional assent, sufficient to secure patient study of that proof, by the following illustration: Consider Green's well-known shorter *History of the English People*. Its title is singular; it is *a* history. Then, if my position is correct, it must describe one action, a single process, the realization of a certain tendency. And in virtue of that fact the English people must be presented as one agent. Dare I maintain these corollaries?

I have no hesitation in so doing. I may, in the first place, call attention to the title he selects. Not only is "history" singular, but the English people is used, here as elsewhere, as a single term. To those who deny that they were one agent we may fairly put the question, in what sense, then, are the English one throughout Green's work? The emphasis Green places on the Teutonic core of the nation, rather than on the land, as his predecessors had done, is an attempt to keep to the one genuine agent of the history, in spite of its migrations.

That the unity of that agency was impaired, Green could not but admit; but he insists that the English people remained substantially one, in spite of all divisions and admixtures. It was a unity, not simply of race but of purpose. No one, it seems to me, who reads Green with the devotion that he deserves, can mistake his conviction that his history was one, his historical synthesis complete, and the aim of his work realized, just in so far as he could see and show this—that in the pirate Angles, Jutes and Saxons lay the nature whose proper, though not the only possible flower, is the England of his day, with its free colonies, its Shakespeare and its Bible, its court and parliament. Not all ages or peoples, not all events are equally susceptible to historical construction, any more than all facts are equally susceptible to subsumption under universal laws; but a study of the many histories written will convince, I think, that where the concept of history is consistently employed, a failure to discover and exhibit within the material presented a synthesis of action, a union of the several actions as members of one action, is at the same time a failure to justify the use of the singular title, a history, and is a failure in the essential of that construction which is peculiar to historical science.

4. Droysen's failure to establish the distinctive character

of historical science seems to me due in large measure to his lack of a definite concept of natural science with which to contrast it. Heinrich Rickert, in his comprehensive and most lucid exposition of the relations of history and natural science,[9] commences by defining the concept of natural science. It tends constantly toward the mechanical ideal, in which we are presented with atoms, without specific characters, the attributes of which lie in their relations to the environment. In other sciences than mechanics there remains an historical element, which introduces differences among the things treated; they have specific characters. But the tendency in the natural sciences is always towards the general and away from such specific characters, from the unique. Hence, Rickert says, the natural sciences are *abstract,* departing from the realm of *reality* where all is unique, where there is an inexhaustible fund of specific characters.

Historical science, on the contrary, deals with the unique; it retains the wealth of detail that characterizes reality, immediate experience. Natural science, in arriving at the general, has to break up that complex unity of character that makes up the individual. History, on the other hand, clings to the individual as something indivisible. It does this in the subsumption of lesser individuals under greater; as, *e. g.*, in placing the individuals Garibaldi and Mazzini within the greater individual, the Italian nation. In all such greater individuals there are some members whose complex unity of character is of significance for the whole, as in the case of the above-mentioned heroes. They were of value to Italy not merely as one among many, but as having certain specific unique characters, as indivisible complexities. It is of such members that history treats, and historical synthesis is the subsumption of such members within greater individuals.

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[9] *Die Grenzen der naturwissenschaftlichen Begriffsbildung.*

History in the broadest sense, Professor Rickert says, is not a science, but merely " what has happened." It then is reality, but not the *science* of reality. *Scientific* history he tends to limit to human history. It is not reality, but, because of its retention of individuality and uniqueness, is nearer reality than is natural science, with its abstract generalizations.

Certain features Professor Rickert adds to his concept of individuality to complete the historical concept. Historical content is continuous, developing, and is bound together by a teleological relationship, though causal explanation proper is not excluded from it.

Many points in the logic of history Professor Rickert has worked out in some detail. His work certainly is the best on that general subject, in view of Droyson's obscurity. But I think that his general position is not the best; that it falls short of Droysen's in its failure to emphasize the element of freedom peculiar to history, and the concept of inner causation and potentiality that applies to historical development.[10] And it is meaningless to me to assert that history is nearer reality than natural science. They both are real if truly science.

The point to make here, I think, is, that the natural sciences in all cases *start from* a history, whether it be an observation or an experiment. For the " fact " from which the naturalist starts and to which he returns for verification is a *past process*, of which there remains only the evidence; as when the meteor has left its traces on the photographic plate, or the falling ball has caused a certain displacement in the material into which it fell. The naturalist starts by employing historical concepts, inner causes, potentialities, and, do what he may, never escapes from them wholly. The direction of the naturalist's efforts is to refer all events to the motion of the thing as conditioned by the "totality of circumstances"—a reference that reduces the thing to a condition of passivity relative to this immeasurable totality.

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[10] In expounding the significance of spiritual as contrasted with natural, Rickert does not base the distinction on freedom. On p. 415 he seems to assume that those who defend the existence of freedom mean by it "Ursachlosigkeit." Surely only its opponents do so. No wonder he concludes that: "Der logische Gegensatz von Natur und Geschichte mit dem Gegensatz von Notwendigkeit und Freiheit nichts zu thun hat."

Just as in the naturalist's constructions the historical element of specific activity in things persists, so, in historical syntheses, agencies and actions never appear entirely free or entirely one. That there is unity within the sum of tendencies that the historian has grouped under one tendency and action is a truth he and his reader often *feel* and *believe* rather than prove for all men. And lack of unity in the action means interference, and mechanical, causal relations between elements unsubordinated to the teleological.

The physicist starts with simple histories, *e. g.*, the fall of a ball through different distances; and, noticing resemblances and differences between these past processes, these histories, finds a law which applies to all such histories, whenever they shall have occurred. And, indeed, in order that he may thus generalize, he analyses these simple concrete histories into others yet more simple. Thus he arrives at agents of less and less complexity and less internal significance. On the other hand histories direct the common perception of man to the existence of agents and actions greater than it knew, presenting us with beings of greater and greater complexity and internal significance. It seeks the unity of action of a nebula or of the Milky Way; to comprehend, not in a formula but as a concrete fact, the "life," the development of the material earth as a whole; to grasp not merely the life of one living thing, but the purposive growth of the animal and vegetable kingdoms, separately, and also as one interrelated and mutually helpful evolution; to note the development of a nation, of a race, of humanity, now in a political, now in a social, now in an economic aspect; in terms of its art, its religion, its philosophy; and again in some one meaning and purpose fundamental to all of these.

In the *genesis* of natural and of historical science mutual dependence may be observed. The dictum, for every effect there must be a cause, lies at the basis of the generalizations of natural science; but it itself is not the result of generalizations, but the expression of the historical sense of the unyielding character of the past, that for any given present fact there is *just one past history, which can be discovered,* although it has vanished. But the inviolability of this relation between a past fact and the evidence it has brought about and which persists, is a product not so much of experimental science as of social, and especially legal relations. For advanced social life requires the comparison of evidence and the record of one among conflicting "histories" proposed for that evidence; and experimental science has never begun until, after ages of close social contact and legal contention, there has arisen the historical sense above referred to.

On the other hand, in the discovery of the past, in the interpretation of evidence, it is obvious that the historian not only cannot run against universal law, but often must seek its aid. If he would write a history of the earth, of a man, or of a nation, his account must be confirmed by its accordance with the laws of geology, sociology or of psychology, etc.; or, if it ventures to oppose the known laws of those sciences he must assert the credibility of new laws, on the ground not only that the facts of his history fit in with each other better than would a history constructed along the lines which the laws he would overthrow demand, but also that the new laws he would suggest in fact fit in with the *totality of science* as well as, or better than, the laws he would supplant.

But, of course, the historian cannot depend on the generalizations of science always to tell him what is the past event which is causally connected with some present fact. The historian who, in striving to realize Cæsar or the Roman Empire, supported every inference as to their character by a law of psychology or some other science would not get very far. So far as I know, no historian ever tried to do such a thing.[11] He uses his memory and his constructive imagination more freely than the naturalist dare.

Such manifold interrelations, such interdependence and supplementation of each other's labors, exist, I would show, between historical and natural science, rather than the neat but barren antithesis between sciences of the universal and the individual, of the abstract and the real. A further advantage in characterizing action rather than individuality as the concept of history, is that in the former not only is individuality included but also the temporal, developing, continuous character of historical content, the peculiar character of historical causation, the teleological character of historical construction, and the practical purpose of historical study are implied. That one term, action, in antithesis to law, thoroughly distinguishes the field and purpose of history from that of natural science.

And, if this can be proved, surely no unimportant thing has been done. For it should aid to focus and to put in a form not easily laughed away the conviction so strongly maintained by some and so lightly set aside by many that there is a tendency in human knowledge and science quite different from that towards a mechanical interpretation of things; a tendency that should enrich the world with new meanings, that should heighten the importance of merely individual convictions, wherever these take the form of a comprehensive system. For, in saying that there is a science of history, I do not mean a science of measurement; though history always defers to evidence that in the last resort is physical and measurable, it climbs towards such interpretations of things that in respect of them assent or dissent can be awarded, not after the use merely of statistics and measurements, though these have their place, but after an examination and reorganization of individual purposes and ideals.

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[11] *Cf.* Rickert's remarks, p. 429 *et seq.*, *op. cit.*

CHAPTER II

ACTION AS THE CONTENT OF HISTORIES

5. PROOF THAT THE CONTENT OF HISTORY MUST BE ACTION.—6. THE HISTORICAL PAST AND THE "DEAD" PAST.—7. ILLUSTRATIONS; OBJECTIONS MET.—8. A FURTHER OBJECTION; PASSIVITY IN HISTORY.—9. FURTHER ILLUSTRATIONS, AND SUMMARY.

5. In the last chapter I attempted to distinguish historical from natural science by contrasting the purposes of each: the former seeks and exhibits action; the latter, law. In this chapter I aim to prove and illustrate my position with respect to history, having regard, however, in the first place, to the purpose of what may be called historical *invention*, or discovery, in contrast with historical *construction*. The latter notes the relations between historical elements, and is dealt with in the next chapter. The former seeks the elements, the material of history.

This search for the material of history is, in the first place, a search for a past fact, of which there exists now only some effect, which is the evidence of it. The historian loves to insist that he is concerned with fact; but must, of course, add that it is not present but past fact. Further, this past fact of history is to be distinguished from memory. The historical past is not the property of any one person's consciousness, but is open to the discovery of any man, just as the physical world is not feeling but is what any one may somehow feel.

Memory, itself a present fact of consciousness, refers, in so far as it really is memory, to past events. The truth of memory means the reality of that past. But the reality of that past, in turn, *means* that it was a possible object of common perception, needing only the presence of a percipient. The primary *proof* of this possibility is some present object, some object of present perception, the product, the effect of that past. This present object of common perception is fundamentally physical, and the past event of which it is the product is a process fundamentally physical, or with a physical reference.

History emphasizes the *proof*, the certainty of the past; it, therefore, has for its content, externally considered, chains of physical events connected with present facts, their evidence. Each of these chains is "impenetrable"; and it not only excludes from past fact all conflicting chains, but it serves to posit, as it were, other chains of events that correspond with it. Thus, that B was at C at the date D, and the fact that A saw B then, tells where A was, within limits. In this way, from different pieces of evidence, all in the last resort physical, the historian constructs, or rather reveals, a vast "web" of interconnected chains of events, all leading to those pieces of evidence, all having also a physical reference, and, together, confirming each other, constituting a realm of fact immutable so far as it is really known. This character of history that contrasts it with memory we may call its "objectivity."

With these points in mind let us ask what the "inventive" historian does when he seeks the past fact corresponding to a present piece of evidence. Is his pursuit, indeed, a search for *actions?* It is a pursuit that all of us take part in; when the mistress fronts unexpectedly a broken tea-cup, when later the maid marks in wonder her angry tone.

In the first place, we note that the inquiry always starts from a history: the tea-cup *has been* broken; Crusoe saw that *some* naked foot had trodden on the sand. That is, the "inventive" historian does not seek the past, the history, of the present in general, but of a *limited* present, which already has a *unity* of its own in virtue of a certain history, a past process that brought it about. And his inquiry proceeds because, within this original unity, or in its relations to the environment, appear conflicting elements, so that there is difficulty in recognizing at once the history that shall apply without contradiction to them all. How could bare feet tread on shores where the booted Crusoe walked alone? Whence the irritation of so amiable a mistress?

In like manner, until Hutton realized that rocks are to be regarded as evidence of some kind of past process of deposit, he did not seek to know more exactly the nature of the deposit. Until Pickwick recognized that the famous marks were evidence of the process of inscription of some kind in an unusual place, he did not begin his twenty-seven different constructions thereof to suit as many imagined histories. But when this inquiry is completed the multiplicity that was its cause has been reduced again to a unity, due as at first to the perception of one past process that has brought the several elements into their respective conditions and relations. The cup was broken through a stupid and ungrateful act; the footstep was that of a savage from some neighboring isle; these rocks of like character thus scattered along this line far from any similar bed are of one deposit, but eroded, conveyed and again deposited by one ice-movement, the scratches caused by which remain on that bed-rock or its vicinity; put in a letter or two, and then what seemed merely so many disconnected signs becomes now one Saxon inscription.

This past process, which thus gives unity to the several elements of the evidence, is a unique fact of a certain duration: that is, it has a beginning and an end. The end is the present fact, the evidence; the beginning can be thought of only as the *potentiality* of that end. For the histories, the past facts, which we daily seek in order to explain the present, as in the examples given, are of a complexity covered in its unity by no law. Thus the geologist, when he has noted the configuration of the several levels of a flood-plain, and of the hills bordering it, the character of the stream, etc., may construct a rough history of the plain's formation, its approach to the present condition from the time that it was a plateau, perhaps, or an ancient lake. Though guided throughout by his knowledge of natural laws and by intuitions of space relations, he constructs a unique fact. Even where a law later is found to cover the whole history, as in the case of periodic comets, the historical construction of the comet's past course was at first a unique thing which served as the basis of future generalization.

Hence the beginning, the cause of the past process, when thus first discovered, is known only as the *potentiality*, latent *within* the known limited conditions, to produce the result, the fulfilment in the present evidence.

This potentiality which thus unites the several elements of a history, and explains the result, is properly called a *tendency*, for the following reasons: A *possibility* is something that requires an external stimulus to bring it into effect, as in the case of potential energy. A ball, perched in an uplifted cup, stays up forever unless some external influence shall change its condition. But the historian, in his search for the past of given evidence, has not, in the first instance, a knowledge of the influences external to the several elementary processes in which he is to find the one, the unifying process. Hence, he cannot conceive the initial stage of that process as dependent on external stimulus.

It realizes itself. *It is not, therefore, a mere possibility.* But, moreover, just because of his ignorance of circumstances, he cannot suppose that the initial stage is such that in itself it *must* be realized. The potentiality is not a *necessity.* It is a *tendency,* because we mean by tendency that which realizes itself, unless thwarted. Thus, we may say a boy has a tendency to become a good citizen, even though circumstances later prevented it.

The *past process,* then, which the historian seeks, to explain the present fact, which fact is the evidence because it is the product of that process, is the *fulfilling of a tendency;* this tendency, latent in the multiplicity of elements which originated the historical inquiry, in its realization gives unity to that multiplicity, until the evidence is perceived as the product of one process. This fulfilling of a tendency is *action,* of which the unity in which the tendency resides is the *agent.*

It is important to note the part played by *reaction* in historical conception. In physics, action and reaction are said to be equal. But this is somewhat to pervert the meaning of reaction. If I move this ink-well along this desk the past process is *my action;* but where resides the reaction? If, anywhere in the universe, there had been a surface of *no friction,* the motion would have taken place *there* and not at the surface of my desk. Hence all things external to me participated in the reaction. Hence the latter is properly an *indefinite term;* and, in asserting the equality of action and reaction, the physicist really takes some convenient portion of the universe external to the original agent, and treats that portion as *agent* of an opposite process. He compares two *actions.* But, in history, the agent is that in which the tendency resides; the reaction is an indefinite term applying to the unknown and supposedly passive environment. A portion of the multiplicity of that past process, whose apparent incongruity started the inquiry of the historian, usually becomes merged in this indefinite environment.[1]

6. It is not always obvious that action is the content of any given history, and, to see more readily that it is, one must keep well in view the *dynamic* character of the historic content. This character follows from the connection of an historic event with its evidence; which, if it is lost sight of, carries with it the "*factness,*" the reality so essential to history, resulting from its association with the evidence.

Thus, if I assert that it is an historic fact that Perry defeated some British ships on Lake Erie, I find that the force of that assertion lies in the dynamic connection that I at once postulate between that event and some present piece of evidence, be that only a school text-book. The historic battle brought about the story told of it in that book; it brought about the sense of patriotic pride I feel when I hear of it, or some other present thing. I also connect it, no doubt more or less vaguely, with the general stream of history, giving it therein its date, and its interconnections with other events past. This general history is a stream, I find, whenever I have regard to its reality, to its genuine historic character. It moves towards the present everywhere. Whatever I can definitely localize in it takes the same character of movement, as it attains historic worth.

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[1] It is well to note here that there is no inherent reason, apparently, why we take the past processes of history to begin at one point rather than another. The term "tendency" covers this character of historic processes; for a tendency is not an absolute beginning, but a point in a process which may be treated as the fulfilment of one process and the beginning of another. Thus, the boy's diligence at home may be regarded as a tendency to produce a good citizen; but if so, the process of producing a good citizen is already taking place in the very existence of the tendency, the diligence at home. And so, backwards, indefinitely. The tendency marks a convenient point at which to start.

In reading histories we constantly forget this connection of the material with the evidence. At such times we might as well be reading fancies as history; but we are constantly recalled to a sense of that connection, and of the fact that what we are reading produced a certain present state of things that is evidence of it. We can, indeed, free ourselves from the historic point of view. Then, instead of dwelling on the " factness " of the past event, we dwell on its " pastness." Thus Longfellow said:

> " The bubbles we pursue on earth,
> They vanish ere death shuts the eye,
> And leave no trace."

This past that leaves no trace is what he elsewhere calls the "*dead* " past. The bubbles left indeed traces, evidence, but no one pays heed to that. The thing, the past fact *has gone*. But the historian always pays heed to the evidence, for his whole realm is built on that, on the dynamic connection of the past with that evidence. His past is not a mere dead past, but an " eternal possession."

Very often the historian makes us forget that the event of which he speaks is a past fact in order that we may study it as a stable present condition. This gives us the "*historic present*," thus well named by grammarians. The change from this stable presentation to the dynamic stream of history may be illustrated by a selection from Green's *Shorter History of the English People*. He wishes to bring vividly before us the England of Chaucer. "*It is this new gladness of a great people that utters itself in the poetry of Geoffrey Chaucer*." This picture is held before us for some pages, while Chaucer's fancy presents us with the England of his day. Finally, Green once more makes us aware of the general trend of the stream into the depths of which we have been steadily gazing. We are made to perceive again that the facts just told us ceased long since, but have their place in the action the issue of which is the England of to-day. "*It is strange that such a voice as this should have awakened no echo in the singers that follow; but the first verse of English song died as suddenly and utterly with Chaucer as the hope and glory of his age. The hundred years that follow. . . . No age of our history. . . .*" The dynamic association with the evidence is renewed, and we deal again with historic action.

It is only by looking through the details, the proofs, the moral reflections, etc., of the historian to grasp this underlying movement which makes the work a history, that we can appreciate the worth of my contention that action is the concept of history.

7. Thus far I have tried to show that history, simply because it is the "past of evidence," must have action for its content. I have given some simple examples of historic content in which the concept seems to apply. I shall now proceed to examine some typical histories of a more complex character. In each of these some objection against the applicability of the concept action may be raised. But in each case I think I fairly meet the objections, while the discussion serves to illustrate, explain and amplify my fundamental position.

For example, it may be objected that we have in fact no unity in the evidence corresponding to the assumed unity of the action. Thus, in Green's *Shorter History of the English People*, what single piece of evidence can I point out which is the issue of the action that, according to my account, should be the central theme of his history? If there is no such single piece of evidence, then there can be, according to the definition of history we started with, no one past action, nor can the concept of Green's history be action.

It is possible to question whether Green has in fact presented us with a single *issue* of his action. In that case he has also failed to present us with any one *action*. For the unity of an action certainly includes the unity of the end towards which it is directed. And in a past action that end must have been realized. But the obvious fact is that Green, least of all men, did question the unity of the result of that action. He goes out of his way to write the history of the English people, not the history of England. He names it *one* history, and asserts the unity of the subjects it deals with. To him, as to most Englishmen, there is a unity in the present English race as certainly as there is a unity (in spite of the "porosity" of matter, and the constant change of the body's substance) in any Englishman's living body. Moreover, whoever questions the unity of the evidence and the action, questions the right of Green to his title. To those who would write the history of the Anglo-Saxon race, or at least speak as though such a history could be written, it is objected that no such history could be written, because no corresponding unity of evidence can be found. There is not, and, they say, there never has been, an Anglo-Saxon race. Thus, the "objection" turns out to be a confirmation of my definition of historic content. For, to deny that this history is a single action resulting in a single piece of evidence, is to deny that the history was one as the title indicates. That is, the history and my definition of it stand or fall together, thus far.

A second objection may be raised on the ground that in many histories the course of events, instead of leading up to the present evidence, winds up in a past more or less remote. Grote's account of the Athenian democracy may be taken as an example. The evidence long since created by the actions of the Athenians has, with whatever unity they gave it, been handed down by another agency, by the "action of time." Of this other agency Grote does not speak, it may be urged, and therefore his history is not an action with a dynamic relation to the present.

My answer may be anticipated. What is it that assures us, as we read his narratives, that it is more than a tale of what might have been? The fact that, from the first page, the movement of the action he records toward the present is indicated. This is the meaning of the *date*, and the placing of the action in the physical world. By these simple devices we are at once assured that this action is a part of the onward trend of things to certain features of the present. Were not the Athens of those days emphatically connected by an unbreakable chain with some features of the present world, *i. e.*, its evidence, the whole narrative would be in the realm of fancy. Athens still exists and the connection with the present is so easy that it may readily be overlooked. But it is essential to the historical character. It persists in the background throughout the history. And when Grote leaves the people of Athens, by the very fact that he leaves them definitely in the historic past, he connects them, by the steady stream of that historic past, with the unity of the present evidence that he discovered.

8. If the concept of history is action, it may be asked, how can passivity appear in history? If it is action that produces evidence, how can we have evidence of no action or of the opposite of action? Was not George III more or less passive in 1781? Were not those ambitious of annexing Canada in 1812 shortly reduced to a passive condition, in large measure? How can history record such passivity?

Passivity may mean (1) thwarting of tendencies, as above; (2) no action; (3) motion or change of a thing in which the nature, not of that thing but of something external, is realized, as when a body moves under the influence of its relations to its environment.

The first occurs in history only as a matter of *inference*. It is not what George III failed to do, but what he and others did that made evidence. But from what George did, including, of course, what he said or wrote, it is *inferred* that his nature was such as was thwarted in the sequel. Thus, when we see two trees of a certain kind growing very close together, and less developed than most trees of their kind, we generalize as to the nature of such trees, and infer from the evidence that they have not done what it was their nature to do. They have been partly passive to each other. But the evidence, their present bulk, is what they did, not what they failed to do.

The second kind of passivity, mere absence of action or, indeed, of change of any kind, is again a matter of inference. While in certain things changes took place, in others nothing occurred, for there is no evidence of their action during that period; only at the beginning and end.

The third kind of passivity, which amounts to external as contrasted with internal determination, marks, as I shall show in the next chapter, the limits set to historical synthesis, for that deals with internal determination or action. Here the question is, how can such passivity be part of the material of history? How can evidence record external determination?

This differs from the first case because, here, instead of asserting that the nature of a thing has been thwarted, *specific* nature is denied to it. What happens to it results from the environment, to which it responds according to law—according, that is, to the *general* constitution of things.

It is thus that Socrates appears weighted by chains and poisoned by the hemlock. But, though staying and dying simply under general laws, those laws by which he dies are not as general as those by which he stays weighted down; for not all things can die, and not to all mortal things is hemlock fatal. So it may be said that in all cases of "external" determination we have *reciprocal* determination; that is, *two* actions occur; *i. e.*, that of Socrates in dying, that of the hemlock in poisoning; and each needs the other, *each* is externally determined. Only in the case of an atom, which is acted on by a universe *like it in nature but immeasurably greater*, may the part of the individual thing, being regarded altogether quantitatively, sink to zero. There the external determination may be regarded as complete for purposes of calculation.

But in history, as the past fact of which there is present evidence, the universe, or anything infinite has no place. If an atom's history were discovered, its environment, so far as that appeared in its history, would be as limited as the evidence from which the historical inquiry must start and to which it must return. That is to say, in all histories the object perceived to suffer change under general laws has an appreciable influence in deciding the character of the laws that apply in its case. It is thus far active. In fact the history, as such, presents us with a multiplicity of agents, and these are causally interrelated. To note that these causal interrelations correspond to the general order of things, and to assert that therefore the objects are subjected to general conditions and passive, is to go beyond the evidence. That speaks only of several actions. Therefore, it is to go beyond the ground of history proper, which always rests on evidence. Moreover, the ascription of such passivity is never justified except on the assumption that the objects thus characterized could be analyzed into atoms, and their actions explained strictly mechanically. But such an analysis deprives the objects of the character they possessed in history. Socrates, as a congeries of atoms, is not the wise and witty Athenian. That is to say, this third kind of passivity is something that history itself does not include; but it may be asserted to subsist between the several objects that history, from another point of view, regards as one. But that assertion has only a secondary value for history, viz., to clarify or make more probable the several actions the evidence seems to record.[2]

9. Undoubtedly the reader, if he now turns to histories to see whether they do indeed exhibit simply actions, so that *a* history is always *one action*, will have much difficulty in seeing that it always is so. Remember, however, that, even after the care that has been taken in recent years to make definite the concept of natural science, we still find

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[2] A particular form of passivity appears in history, in what we call reactions. These are not reactions in the proper sense, but *reverse actions*. Thus, if we view England's history as the realization of freedom with a complex social order, we are likely to term Cromwell's later reign and the days of willing subserviency to Charles II a reaction. What place has it, then, in a history which is an action as above described? The answer is given, in general terms, in the popular view of reactions after too rapid advance. The advancement was too rapid *in view of the individual's character;* and, consequently, the reaction, in the same light, is really a preparation for the onward advance; and so, after all, is an element of the total action, and itself an action.

If, in histories, it is at times difficult to see this, it usually becomes evident if we remember the wider action in which the individual of the history enters as a historic element; thus England entered into the history of Europe and the founding of the American colonies at the time referred to. If she moved too quick for that environment, that fact, in view of the historical aspect of the environment as a part of the nature of the historic individual, makes of the "reaction" an action, a preparation for the next step in the fulfilling of the essential tendency.

treatises that are everywhere accepted as scientific in which, nevertheless, one can discover generalization or classification only with difficulty. Moreover, the term history still has some remnant of its original meaning of investigation, a meaning preserved in the expression, natural history. But for all that, any one that will consider histories with a readiness to move through the mass of details to the stream of movement behind, will not doubt long, I think, that it is the purpose of the historian, as such, to exhibit one action in his history, and that in so far as he failed to do so, he failed to justify the title of his work, if that be expressed in the singular, as "a history."

For example, in reading Gibbon's history of the decline and fall of the Roman Empire, it is not easy to see the one agent; for the Empire appears passive and its foes possessed of no one tendency worthy to be the centre of his history. But Bryce gives clearly the thought that underlies and gives unity to Gibbon's account: the idea and spirit of the dying empire, as its ancient body fell away, took hold of the barbarian hosts and made of them one agent, in the rehabilitation of imperial rule and order, a fresh incarnation of the spirit of civilization. Gibbon, to be sure, then turns to follow the fading fortunes of the Eastern Empire. Bryce seems to think that the unity, which at first he describes as idea and spirit, is preserved only as a mere form and institution, and therefore traces the degradation of the Western imperial crown. Hegel, however, thought he saw that the unity continued to underlie all the contending nations of Europe, as the deepest, biggest thing there. And so he followed them, tracing the one action which they embodied towards its later form.

Geologists usually confuse the history of the earth with the continuous development of animal life. Geology proper surely should deal primarily with the science and history of the earth's material. And geological history, as Dana taught, should see the earth as an agent, and describe *its* life.[8] The idea of continent formation, and of the evolution of the earth's crust along two lines of upheaval, are examples of geological history proper. The attempt to grasp the solar system as the development of a primitive nebula is an historical effort. The nebula was an agent, and so is now the solar system. A multiplicity of elements are combined therein in terms of a common tendency—not a tendency present in the same form in all parts, but one requiring the co-operation of the several parts, each in different ways, for its realization.

In many so-called histories the main purpose is not historical, but is to present some general truth, or at least to note resemblances and differences between the several phenomena presented. Such attempts at generalization are usually presented in chronological form for the simple reason that examples most like each other are commonly thereby brought together, and (a point that is more important) the causal relations are thus more easily noted. Examples are: Del Mar's *History of the Precious Metals*, Bishop's *History of American Manufactures*, Dunning's *History of Political Theories*, Seligman's *History of Progressive Taxation*. In all these, the justification for the title "history" lies in the chronological order.

This chronological order, however, is an evidence of action. The reason that the order of sequence is preferred is the recognition, now universal, that the order in time imprints itself on events, so that there is internal evidence which of them precedes the other. This imprint is the action of events in general, of the course of the world, of the action of time. If the conception of this action is

[8] *Manual of Geology*, pp. 9, 10.

vague in such histories, it must be remembered that the element of historical synthesis is vague in them also; their primary function is to discover laws or classes.

In this chapter I have tried to show that the historian, in his inquiry after past events, starts from some present fact, or facts, which need explanation, and finds the past process that explains them in terms of the realization of a tendency, or an action; in the light of which those present facts, now the evidence of that action, take on a new unity and meaning. The content of history is always this past fact, thus associated dynamically with the evidence that it has brought about. But this essential content is seldom portrayed in its simplicity. Partly because the unity of action is seldom perfect in terrestrial things; partly because the historian must take his reader through a multitude of static details before he can enable him to penetrate to the hidden stream of unitary action. This it was that historians had done, before Buckle demanded of them that they turn their attention to the discovery of laws; and this historians have continued to do, in spite of his demand, though their work has suffered from the lack of a sufficiently clear answer to his clear and narrow challenge, What is it you have done? In the next chapter I shall try to state more clearly the purpose of the historian, and the value of his work, as he constantly finds more comprehensive and more significant unities of action in the past, and, therefore, new depths of meaning in the present.

CHAPTER III

ACTION AS THE CONCEPT OF HISTORICAL CONSTRUCTION

10. General Proof of the Proposition, and Statement of its Significance.—11. Historical Construction in Biographies.—12. Other Historical Constructions.—13. The Bounds of Historical Construction, and Freedom.

10. In the preceding chapter we have discussed the search of the historian for the facts of the past, and have seen reason to believe that those facts, in the first instance, are always *actions*. This search for the past, which may be animated merely by a noble curiosity, is historic "*invention.*" But there is another side to the historian's work, viz., historical *construction*, where the historian is concerned with the relations between historical elements, as these elements are revealed by the process described and discussed in the preceding chapter. I wish, in this chapter, to complete my account of the concept of history by showing (1) that, in this construction, the concept governing the historian *must* be *action;* (2) that the concept indicates also the *inspiration* and motive of the constructive historian; (3) that through this concept, thus applied, historical and "natural" science stand in the clearest antithesis.

As to the first, that action *must* be the concept of historic construction, it has been shown that the reality of the content of history (and history is nothing if not real) depends upon the dynamic association of the facts of history with the evidence we have of them. But the construction, the synthesis of the elements of history, whereby the relation of several elements to each other is manifest, must also have this same historical character, for it cannot be mere fiction, and must therefore have the same dynamic connection with the evidence, and must by the same argument be action. That is, what makes the several elements *one* must be an action, and whatever is added to each of the elements through its presence in the whole must also be action.

As to the second point, that the concept action indicates the inspiration of the historian, let us note that it follows from what I have just said that anything that is an element in an historical construction or synthesis, thereby is active in a greater measure and in a different way than if it remained without that construction. Now action is the realization of the tendencies of a thing; and tendencies constitute the character or nature of a thing. Hence, to know in what wider syntheses of action a thing appears, is to know more of its efficient nature; and if the things in question be men, or, indeed, whatever they may be, the historian has a worthy task in thus ascertaining wherein things do or may realize themselves most fully. Not only would I show that this aim ought to be the aim of the historian, according to the deduction before given, but that it has been and is his aim and inspiration.

And as to the third point: action, as the concept of historical construction, implies a relation between the elements of history that is rightly called *teleological*, in contrast with the mechanical relations of things in natural science. For, inasmuch as the lesser elements of a history build up the greater, they are means towards its realization, that is, to the realization of its end. And, again, since that greater action must, as already shown, conduce to added activity of the lesser elements, it is a means to their realization and fulfilment; and so, through that greater action, to which all the lesser contribute, each lesser element is a means to the realization of every other. This reciprocal relation of parts and whole as means and ends, is in terms of the fulfilments of the tendencies exhibited in each, that is, of the end, the τέλος of each. The relation, therefore, is teleological throughout.

The contrast between teleological and mechanical synthesis is made manifest by comparing the kind of causation implied in each. In the teleological relation the effect attained in any element of the teleological construction is the realization of the end or goal inherent in that element, proper to it. A thing is active only when it realizes *its* ends. And the explanation of the process through which that end was realized is the tendency which the thing had. In other words, in such teleological relationships between elements the causation is "*inner*;" whereas in the mechanical, the drift of explanation is always away from inner causation to external, until, in the mechanical explanation proper, whatever change takes place springs from an external cause. We shall see (chap. iv) that perhaps at no time does the physicist quite break free from explanation in terms of inner causation, but we shall also see that that is his drift.

It is because of the insistence on inner causation in history, I think, that it is rightly said to be the science of freedom; for freedom means to me nothing but activity according to one's own nature. If we mean by freedom, causelessness, therefore, the teleology of history is opposed to it. If we mean by freedom the *consciousness* of the realization of one's own nature, teleology is consistent with it but exists without it. There was teleological relation between plant and animal life, and even between the parts of the solar system, before man's consciousness took note of it. But if we mean by freedom the absence of external, mechanical determination, then teleology does not assert it, or at all require it; for, wherever there is historical construction there is a multiplicity of elements as well as a unity, and between the many elements reciprocal and external determination appears.[1]

11. We have now to show that the historian does in fact seek to exhibit a synthesis of lesser in greater actions in a teleological relationship. We shall see, I think, that what other men leave in isolation and poverty he brings together, with the result that he fills the world with objects of deeper significance; objects that we may imitate or reject, objects into which we may enter as elements, or from which we may free ourselves.

Such a synthesis of many small actions into one great one is exemplified in a biography, if it be a good one. Samuel Johnson, in his seventy-five years of life, through many actions left behind him traces which survive in evidence still before us. To the common eye unaided, that evidence has no significant unity. To the naturalistic eye a synthesis of certain portions of that evidence might be made with the evidence that other men had left; for the Doctor seems to have been a splendid "case" for the pathologist; and one might study his eye, another his liver, another his brain, exemplifying, revealing or casting doubt thereby on certain generalizations of medicine or psychology. The unity of the man would not thus be discovered, nor would he appear as active—rather as subject to the aberrations as well as to the normal activities of his several parts.

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[1] In this contrast between mechanical and historical construction, I have not noted the character of uniqueness. That seems to me quite secondary. The historian does not look for unique things for the sake of their uniqueness. Why should he? He starts from a particular thing, viz., a piece of evidence, and whatever constructions he makes, he must return to a particular present fact as the evidence of the past existence of those constructions. But the naturalist also starts from and returns to the particular, for verification. But, while his search takes him away from the particular to the general, the historian's activity takes him from lesser to greater. So he never departs from the unique because there is no reason why he should. But that fact does not characterize his task. It is worth noting, however, that in the historian's explanations the coming into existence of *new* things is implied, for the realization of a tendency must differ from the mere tendency. Whereas, of course, the ideal of mechanical explanation is to find that everywhere the effect equals the cause—a result only achieved through rejecting all but quantitative characteristics.

But when Macaulay's appreciative eye fell on the mass of evidence, Samuel Johnson stood out for him in his unity as "one of the most eminent English writers of the eighteenth century," the "old philosopher," "a great and good man." In his unity he was active; it is the purpose of every biographer to exhibit the unity of his hero; and to that end he recounts the action through which the man in his life realized his inner nature. His several powers or "parts," as a disappearing idiom termed them, are successively revealed in the course of his life, in his actions, gaining their character in large measure from the *general* activity of the man which they, on the other hand, constitute. He *had* a kind and generous heart, a strong though scrofulous body, a mind of keenness and breadth of comprehension, a retentive memory, etc. Separate these parts from the one man, and they are phenomena for psychology or sociology; but in him they are the material of history, the elements that stand in a reciprocally teleological relation with the complete unity of the man. In the man as a whole, while his body attained a grotesque though powerful maturity, while his intellect continually mastered the heritage of his generation and the tendencies of his time, while his heart expanded towards wife and friends and country, we see one life, and one action, thus viewed now from one side, now from another, but always the one great soul and character that England loves without quite knowing how to characterize the object of her love.

Such seems to me the object of a biography, a form of historical science. It is utterly different from the syntheses of biology or sociology; it is conceptually one with the work of historic science everywhere. And the power to grasp a life, one's own or another's, is no small part of knowledge.

The biographer must note further into what greater actions his hero enters; for in so far as he *enters* those actions he adds a new activity to his own nature. Thus, when "several eminent booksellers" enlisted the unique powers of Johnson in the compilation of the first dictionary of the English language, Johnson and they, and indeed all the contributors to and readers of the dictionary, entered into reciprocally teleological relations to each other in the constitution of a new form of literary activity. So, in his letter to Chesterfield, Johnson, by voicing the moral bourgeoisie of England, entered into another such action. And to England in its national aspect he contributed much, and from it he gained much, in depth and breadth of feeling and thought.

Of course, in such syntheses of action as I have just described, there is to be found a mechanical, or at least an external determination. It is always reciprocal, as explained in section 8. It may be well for the biographer to note that Johnson excited admiration in the booksellers, and that they moved Johnson through his ambition, his cupidity, or his love of letters. These explanations, which are, let us say, quasi-psychological, make the narrative clear. They are moreover true. They do not at all interfere with the further relation of reciprocal aid, of correspondence of purposes, of co-operation. But these latter are something other than the explanations just referred to, and are important also. Through this kind of synthesis we get visions of things greater than Johnson or the booksellers, things that made them in large measure what they at their best were; that still persist, perhaps; for it is the same world of letters, surely, that moves onward now as then, and is to-day a thing worth knowing about.

Among those who have the direction of methods in teaching history, we may note the conviction that the scientific aspect of history is the noting of these causal relations between elements of histories. The person who could do that, who could note the widest generalizations in the material of history is what Macaulay meant by a philosopher of history. There was a time when the insistence on these illustrations of general laws in historic material was all-important—at the time when sociology was first finding itself. The insistence on the subservience of the interpretation of evidence to general laws was necessary, too, and perhaps still is necessary to protect us from the myths that patriotism, religion and "philosophy" may seek to cite as history. The historian must become *prosaic,* as Hegel said, meaning just this. But what Hegel might well have called the *poetic* side of history must not be neglected, for there is no genuine historic science without it. In days when men love to dwell on what man shares with brutes and the inanimate, thus always turning toward the smallest things, the most insignificant of the world, for these are the objects of the most sweeping generalizations, it is well to insist no less on the capacity to perceive all the greatness that is to be seen in the world; a capacity not exhausted by discovering a formula for the spatial and kinetic readjustments of things. This capacity is exercised in the perception of syntheses of actions. It is not to be limited to political associations. Historical science touches every side of our lives. And it is not quickly to be decided that any one of them is fundamental to the others.

12. Biography is in some ways the most simple of historical constructions. We usually think, however, in this connection, of the histories of states. It is seen to be of fundamental ethical and political importance that men should realize the existence of a reciprocally teleological relation between themselves and the state, and that histories may serve that end. This aspect of the state has been called its organic character. Spencer called the state a superorganic unity, but I doubt whether his view can be classed as teleological, for he does not conceive the state to have an end in itself. It is a policeman deprived of his humanity. The term organic is properly biological. Whether, or how far, it applies to the state should be decided in detail. We have in the term *agent* a word that certainly applies both to the state and to organisms. Its definition, that which fulfils its own tendencies, implies a unity existing in a multiplicity of elements that are one in virtue of a tendency existing in them all, to which the several elements contribute in different ways because of their interconnection in that group, that contribution being, in turn, a fulfilment of tendencies latent in those elements.

Any history of a country exhibits this teleological relation in a measure. It is made explicit more in histories that are trying to prove the existence of an agency than in those that deal with well-established agencies. It is not often that the historian stops to ask himself what he means by the unity of the state in which he lives and moves all the time. And when we turn to those less assured agencies, such as those of the "Anglo-Saxon race," the Germanic race, American civilization, European civilization, the Yellow race, the Mohammedan world, etc., we are likely to be told that no two men agree on the nature of the agencies in question. This I do not consider a vital defect, for the reasons I give in Chapter VI, but I shall turn for illustration rather to Bryce's *Holy Roman Empire*, because there is likely to be less question on this last point in connection with that history, and we may consider simply what the historian in general *means* by that unity which is the object of his history.

Though Bryce says he writes the history of an institution, created by and embodying a "wonderful system of ideas," yet he does not succeed in separating the institutions from the people in whom it was realized. He exhibits Goth and Roman, pagan and Christian, coming within the fold of one agency, the Empire, the possessor, the incarnation of this "system of ideas." In them the institution is real: they create it; but in turn they are created, in their truer selves, by it. Here is a teleological synthesis.

Between the Roman Church and the Roman Empire Bryce notes an underlying unity; they are one and the same thing in two aspects (p. 166). Here, too, is an historical synthesis; a past fact, a unity which must be recorded in the evidence and not a mere discovery of the historian. They were one because they acted as one, towards common ends. But Bryce treats this unity as partial. Though we catch glimpses of the idea that the people of Europe are the seat of a real unity, gaining by the conflicts of Church and Empire, the dominating sense is one of loss. I have shown how, in spite of the character of history as the science of action, such passivity, such mutual interference and reciprocal determination in an external way may appear within histories.

Hegel, however, insists that this conflict itself may be taken up into the "inner" development of the age. It was not a case of interference but of assistance. We may paraphrase his account as follows: The essence of the Christian principle which the German race was in process of learning, is the recognition that man, so far as he is spirit, possesses the activity of the deity. But, before this idea could fully be grasped by the mind of man, the antithesis between man as nature and man as spirit had to be brought to daylight, as it were—that is, "externalized" in a conflict between two divisions of the people, the one representing nature, the other spirit. The spiritual "therefore" limited itself to the visible church, and that proceeded to subject to itself the merely natural, the laity, in conformity with the generally but confusedly recognized principle of Christianity. The natural sought, then, the spiritual in activities directed by the church, even to the point of seeking the burying-place of Christ. In this subjection of its deepest nature to the tyranny of church doctrine, combined with the discipline of feudalism, the "knotty heart" underlying the German temperament was softened, and, with the aid of art and science and discovery, was itself lead to the recognition of the divine. Then could follow, as the next step in the self-realization of the Christian world, the overthrow of the church usurpant. For the spirit no longer resided with it, for any purpose. This again is a teleological synthesis.

We may quarrel with the facts or the theories of Hegel, but the general nature of his work in his philosophy of history was that of historic science; and if he did it badly it simply remains for some one else to do it better. For the point I would urge here is that the unity the Scotch jurist perceives is just as "mysterious" as the underlying Spirit or Idea which the German philosopher presents, and no more so than the unity of any person we "meet." Bryce says the Holy Empire is "incapable of expression," "above all description or explanation." Though its realization was the common aim of all its members, yet that realization was not merely the common element of those aims, any more than the purpose of a man is the element common to the purposes of his several organs. To know that unity, to " enter into the mystery of its being " as Bryce says in his Conclusion, is to know it in its prime, as a whole, as a product of historical conditions, occupying a certain place in historical development, as living, as an agent. The historian does not gain knowledge of such unities through synthesis of elements. He meets it, in the sense in which we meet persons, coming down through the past, and knows it by ***investigating*** (ἱστορεῖν) its part *as parts*. For his purpose is to understand and appreciate, but not to control or direct, not to create a new combination of those elements, or to predict such a new combination. And this character of his work is deducible from the definition, that the historian studies the past of which there is evidence.

Is the Spencerian synthesis historical? The answer is a complete negative; but to establish this requires rather careful distinction between terms. All things, says Spencer, tend towards integration of matter, with concomitant increase in coherence, heterogeneity, definiteness and complexity; or, with the disintegration of matter, there appear the opposite of these concomitant characters. The former is the prevailing tendency. The question for us is, have we here merely common characteristics of phenomena and a unity brought into existence by a comparison of those phenomena, or have we a unity of past process, in which things have acted as one, producing a unity of evidence, so that the historian may discover a unity that existed concretely and independently of him?

The answer is that the unity is of the former type, it is one of generalization. Though Spencer is sure his formula applies to lesser elements, he is not sure that it applies to greater elements, though he would like to prove that it does. Hence the unity is not one in which the existence of the unity contributed to the character of the parts. Nor is there any significance in the converse statement, which at first sight seems plausible, that at least the lesser elements, in their realization of the evolutionary process, contributed to the greater. For what lesser elements can we name? Were we to take the human body as an example of the whole, there would be no point in asserting that what we know of its organs, the liver, heart, etc., in their realizations of the formula, contributed to its realization in the whole. For, if we remember the quantitative character of the formula, to say that it is realized in such parts, is merely to say that it is in truth realized throughout the whole. The specific functions of those organs have no place in the formula, and individuality goes with them. Again, there could be no synthesis of action between the ultimate elements and the whole; for the ultimate elements, quantitatively considered, being units, could not themselves undergo increase in integration, etc., as the formula requires.

Here I must leave the illustrations of historic construction. It will be necessary to give other examples in Chapter V. Examples are common enough. In common talk, and on almost every page of certain histories, appear references to these greater agencies. But we do not ask ourselves what we mean by them. Historical construction has not become self-conscious. But I hope that this essay may be an aid to its becoming so. In Chapter VII, I discuss the relation of history and ethics, maintaining that the drift of the present is towards a clearer conception of these greater agencies with which historical science is busied, and of our relation to them.

But I would here indicate what there is not space to develop, that we would lose much by confining our application of historic synthesis to the synthesis of human actions. The *conception* is, as I think I have proved, much broader. And the historian of the earth's crust has already given beautiful examples of teleological relationships in such developments as those of the continents and of the general continental system along the two great axes of uplift; for that there is a teleological relationship, a reciprocity of aid between the parts, and the parts and the whole of such developments seems to me to need no demonstration here. In the process of covering the earth with beautiful forms of life, again, it would be not less worthy to exhibit the details of the synthesis of activities among animals and plants than to generalize about the conditions of the origin and preservation of variations. For in such wider fields of action the activities of man have a place from which we cannot altogether escape, though, through comprehension, we may modify it. So that we may realize, perhaps, that, in spite of external determination, we enter into a condition of mutual aid and true freedom.

13. There are two lines of thought current that seem to contradict this idea of recognizing our freedom by realizing into what syntheses of action we enter. The first is, that while we conceive certain sides of our natures, as the æsthetic and the intellectual, to be highest and essential to us, these activities are dominated by the lower, which we share with the brutes. Thus the economic interpretation of history would trace to causes connected with nutrition all transformations of society. I see no reason, however, why we cannot accept Professor Seligman's statement that this economic interpretation "will become less and less true of the future," and that it "only emphasizes the domain within which the ethical forces can at any partic-

ular moment act with success."[1] It does not, in its sane form, deny that man may subordinate, in very large measure, the factor of economic causation. It seems rather to exhibit factors always present than to show why *new* forms of civilization have arisen.

The second of these lines of thought which operate to call in question the possibility of human freedom declares, that "man, like everything else, is what he is because of his environment, past and present." This unqualified would eliminate the factor of "inner" causation. The latter explains the events in which the individual takes part by certain characteristics proper to that individual, that exist in him as a potentiality. In events thus explainable the individual is active. As I have already tried to show, wherever we deal with events that are not mere motions, or analyzable and, indeed, analyzed into motions, there enters this factor of internal causation and of activity. Even the rock that is dissolved by the stream is active in fulfilling its *solubility*, without which the river's action on it would be futile.

But the tendency to regard all events as determined by the environment returns, and a cause for this tendency must be sought. The belief that all things are explicable in terms of general laws has nothing to do with the matter, for, as I develop more fully in Chapter VI, those are laws of activities.

I find the cause for the tendency above described in the following circumstance. All events, those with specific qualities, and also mere motions in space, are in time. The movement of time is measured by certain motions in space that are uniform. The necessity of these motions rests on the environment, as do all lesser motions that fit in with the great movements of the earth. But all events that are historically certain, that have an *objective* character, are so because of their connection with certain evidence of them, and this evidence is in the last resort physical, and therefore partakes of the absolutely determined movements mentioned. Hence the world, with its richness of specific qualities, is taken to be determined in like manner; for a change in the one is always accompanied by some change in the other. Hence, all events are determined, apparently, by this onward movement of time.

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[1] See *The Economic Interpretation of History*, by Professor Seligman, pp. 3, 131, 158. *Cf.* Mill's statement, *Logic*, bk. vi, chap. x, § 7: "The pursuit of truth is the main determining cause of the social progress."

The following well-known passage from Guizot's *History of Civilization in Europe* suggests this arbitrary nature of the "action of time;" its qualitative efficiency is associated with the uniform, compelling revolutions of the earth.

On the one hand, he speaks of that civilization as *active; e. g.*, ripening, enduring, advancing, pressing forward, while increased freedom attended its movements (p. 29). That civilization gives us the historical synthesis of action which he has actually discovered. On the other hand, there appears the conception of an unlimited environment forcing itself from without on this civilization. "Violence," he says, "presides at the birth of governments, but time rolls on. It corrects them. It changes the works of violence; it corrects them—simply because society endures and is composed of men. Independently of the favor of man, by a special law of Providence that it is impossible to mistake, the action of time gradually introduces into society more right, more intelligence, more justice. Thus forces itself into the world, and from the world into the mind of man, the notion of political legitimacy."

It surely is needless to give evidence of the almost universal belief in an all-powerful fate persistently bending the course of time in some direction, or as persistently, as ostensibly with Schopenhauer, rendering null and void all apparent progress. One character this all-powerful factor does undoubtedly possess; it drives all things onward in time. And in the field of history, of the science of the past, it has driven all things onward to the present, the present evidence of that past. This action has imprinted itself on the evidence, so that therein we may with care trace the successive stages of its fulfilling until it is completed in the present. Hence, it is strictly an action, and Guizot with reason calls it the "action of time." Now, with reference to the problem enunciated in the second paragraph of this section, I have to show that it is not possible for the historian as such to regard the character of his individuals as completely determined by this all-embracing "action of time."

I cannot see that we have any right to ascribe to this "action of time" an *infinite* power to determine events of specific character. Such events, so far as we can determine, always flow from "internal" causes, and in a certain limited environment. And, where we find that the activity of such limited portions of environment is in part conditioned by a wider environment, we always find that there is a *reciprocal* determination, and often a reciprocally teleological relation, in which, while the lesser action is swallowed up by a larger, it itself aids to create that larger. In such greater actions our part, *e. g.*, is not to be neglected, for there commonly rests on us an obligation, we feel, to do our part. And our part is apparently never like that of anything else, and has perhaps a unique value, therefore, in the whole.

Now the infinity of space gives us an infinity of evidence, no doubt, and therefore assures us that, however far we carry our syntheses of action, in our activity as historians, we shall not have completed the task. But, on the other hand, however far we carry those syntheses, we shall still perceive a reciprocally teleological relation within those syntheses, and shall perceive freedom in the elements that enter the synthesis, that create it by their "inner" efficiency.[4]

The sense of determination that we receive from considering the "action of time," therefore, results from a confusion of thought, if I have argued correctly. In the qualitative aspects of our activity, the further we extend the knowledge of our relations the *more* activity we shall see reason to posit in ourselves. It is only in our quantitative aspect, as a congeries of atoms, that we must assign to our bodies a zero of efficiency in contrast with the infinity of space. But in the conception of the action of time the spatial and quantitative aspect is combined with the active and qualitative aspect of things, and the determinism of the one wrongly carried over to the world of freedom proper to the other.

In the hope that in these chapters I have shown that history has action for its content, and that historical science is defined through its purpose to exhibit action in the widest syntheses, I proceed now to attempt the demonstration that *natural* science, though it starts from past facts, from histories, from action, constantly works away from action to the conceptions of law and external determination.

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[4] And when, in place of a synthesis of action, we find only a multiplicity and conflict of actions, we not only have, as a fact, reciprocal and not absolute determination, but we cannot exclude the possibility that these conflicting actions may be found to be parts, and of course, then, active parts of a synthesis of action. We cannot exclude *a priori* such solutions of apparent conflicts as that proposed by E. V. Hartmann, in his article, "Energetik, Mechanik u. Leben," in *Zeitschrift für Phil. u. Phil. Kritik,* Vol. 124, 2. He would show that the steady chilling of the solar system, in which equilibrium is indefinitely approached, instead of destroying life, as it would seem it must, is really the very means by which life may be maintained through infinite time at its highest spiritual level.

CHAPTER IV

ACTION IN MECHANICS

14. General Position.—15. Definitions of Action; its Use in Mechanics.—16. Discussion of its Uses.—17. Action and Energy.

14. In this chapter I wish to make as clear as possible what I understand to be the contrast between historical and natural science. As I conceive the latter to be marked by a tendency to explain all things in strictly mechanical terms, the contrast I seek should be found in comparing the ideal of historical construction with the ideal of mechanics. The latter ideal, there seems to be no doubt, is to explain all events in terms of motion and of the universal laws of motion; if possible, of one such law. Hence, the contrast referred to would set *action* over against *motion* as the material of these respective branches of science; and would set *action*, again, over against *law*, as the concept of construction in each case.[1]

To consider more precisely the material of mechanical science, since it seeks a law of utmost generality it deals with a property common to all things and events. All things and events have at least a reference to motion in space. In a law of utmost generality, again, differences in things must be quantitative, and the law itself proportional in form. In the laws of motion things possess the quantity of mass. Mass is a mere *possibility* of motion; it does not imply a tendency in things to move, but only the possibility that under certain external conditions the body will move. Hence the science of mechanics deals with motion and things moving, possibilities of motion and relations in space.

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[1] The antithesis is not complete, for action by no means excludes motion. In chapter vii I contest Münsterberg's position that purposes or ends are the aim of historical construction. What that position gains in symmetry, it loses, I think, in truth.

The general law, "circumstances determine accelerations" (Pearson's *Grammar of Science*, p. 323), refers whatever motions the body participates in to the totality of its circumstances. This general law does not, as I see it, of itself include the law of inertia, as Pearson maintains. In that law every motion or change of motion is conditioned by a preceding motion or change. Therefore such change of motion is a form of the continuance of motion. Now, the circumstances of a thing can determine acceleration only through continuances of motions within the totality of circumstances. And to explain that continuance we must fall back again on the law of inertia.

Therefore, to complete our comparison of historical with mechanical science we must consider the source of this supposed axiom, the continuance of motion and the law of inertia. To put the source of this continuance of motion within any limited or definite body or collection of bodies would be inconsistent with the general mechanical position, which avoids inner for external causation. But the law of inertia itself is so simple and positive a postulate that its source cannot be the mere search for an ever-retreating limit of circumstances.

If I can raise the question as to the validity of so simple a supposed axiom it must be by noting a distinction between things which common-sense treats as identical. In this case it seems that I have distinguished between the movement of time and the movement of things in general. The next moment has arrived, and I ask, why does the totality of circumstances continue its indefinite or unknown movement, carrying on with it the movement of any particular body under consideration? But this is a distinction without significance for the common-sense that asserts the law of inertia. For what would the movement of time be without the movement of things in general? That is, the statement of the law of inertia as an axiom of mechanics is the preliminary positing of all efficiency, by which the possibilities of motion in things become actual, in the totality of circumstances as the action of time, and not as mere environment.

Thus, then, is brought out the antithesis between historical and mechanical method in perhaps its clearest form. Both of them have regard to this totality of circumstances. In mechanical science it is the infinite environment in the face of whose efficiency that of the atom is reduced to zero. In historical construction it merely asserts the incompleteness of any actual concrete, describable synthesis the historian may realize. But it thus impels him only to wider and wider syntheses of action. And the wider such syntheses become the greater the activity of the elements included within it. The latter makes us acquainted with the nature of ourselves and our environment, as objects that agree in the direction of their activities. The former is an attempt to take an impartial point of view, in which all things take the same quantitative character, in order that, within actions alien to ourselves, we may perceive movements like those we are able to control, and by a combination of such elementary motions proceed to the control of the at present opposing actions. Hence, to mechanics, inner causation marks the limit of control and is a category it has shunned since the days of Bacon and Descartes. For inner causation implies the impossibility of analysis into the simple movements of bodies in space. On the other hand, inner causation is activity and freedom in the things in which it exists, and historical science aids us in the detection of those wider agencies in which our own activity is, or may be, conserved.

15. In fulfilment of my purpose to contrast the sciences of history and of mechanics, I shall now consider the use of the term action in mechanics. It has received but one definition, and that in a very special use of the term. In the theory of "least action," action is defined as the space integral of the momentum, or as double the time integral of the kinetic energy. In either case it is ml^2t^{-1} (*Enc. Brit.*, '98 *Mechanics*, § 200). When the particular presuppositions of that theory are allowed for, action appears equivalent to the product of velocity and distance. But this apparent identification of action and motion turns out, when we consider those presuppositions, to indicate the opposite. For the theory of least action, in its equations, treats economy of restraint as mere guidance and not as constraint, the minimum of effort as no effort. That is, the *limit* of diminishing action includes motion but excludes the overcoming of restraint. Hence, the latter is held by this theory and definition to be essential to action.

Though the term action has received no general definition in mechanics, it is used as a self-explanatory term in the definition of other fundamental categories. Thus Mach defines mass in terms of action (*Sci. of Mech.*, p. 220). Holman (*Matter, Energy, Force and Work*) defines force and also energy through action. He treats action as equivalent to a process, an operation; and again, as though it were intermediate between a force and its coming into operation. This use of action to indicate states of movement is common; thus, "the mutual actions between the parts of any system during any motion, as performing or consuming work" (*Enc. Brit., l. c.,* § 200 *et seq.*); and action is described as a mode of passage, a process, a doing (*ibid.*). Newton, in his law of equality of action and reaction, intends the term action to apply to movements as well as to states of equilibrium. And continually we speak of the actions of natural forces, machines, animals, etc., as rapid or vehement, indicating this character of movement or change in action.

The term, however, is applied also freely where there is no motion, where there is equilibrium. Thus we say, "When a system is in equilibrium under the action of forces" (*Enc. Brit., l. c.,* § 258). Newton's equation between action and reaction is much more often applied to a state of equilibrium than to one of rest. Again, we speak of a body's sphere of action (*cf.* Mach, *Sci. of Mech.*, p. 385), and mean by this, not that there is some actual motion, but only that there is something, as it were, *there*, such that if anything did come under its influence change of some kind would result through the first body.

Among all these uses of the terms, act, action, there appears, necessarily, association with a particular thing, which is in some sense the agent. Such expressions as "the combined action of B and C," the "mutual actions of bodies" producing equal accelerations, occur in all writers on mechanics—these come from Pearson and Mach. But it surely is hardly consistent that such efficiency should be attached to the *things* by writers who say that force is the *circumstances of the thing* to which motion is consequent, or that it is an arbitrary conceptual measure of motion. Of course no more, probably, is here meant by speaking of *action* than that the motion which results from two or more bodies in known relative positions is best analyzed by localization of the several forces in the several bodies, so that the respective distances may be taken into account. But it is interesting and important to notice that the word is used, to trace the origin of this use in mechanics, and to discuss its legitimacy.

16. If the position stated in the fourth section of this essay is correct, then the origin of the use of the term action in mechanics is obvious. If, in an experiment to determine the numerical value of the force of gravitation, a ball falls and thereby displaces certain marks at certain intervals, the plan of the machine, with the displacement of the ball and the records of the times of displacement are *present evidence of a past process.* In that process the ball was an *agent* effecting certain things. The process, therefore, as we face the present evidence of it, was an action and a history. That is the "natural" attitude to take, in the first instance. If we are conducting experiments in mechanics, our theorizing starts from such histories. It is later that we learn to posit in the totality of circumstances the efficiency and agency, which, from the immediate evidence, we were led to ascribe to the ball.

The fact that the physicist starts from histories, from little actions, accounts for the origin of the terms act and action in mechanics; and the retention of those terms in the definitions of such men as Mach and Pearson is to be explained again by the fact that it is the most natural, the most deeply rooted way of looking at the world, to conceive its parts as working out in some measure their own destiny, and that the terms act and action so immediately express this attitude that they are the last terms to be called in question. Hence, they themselves are not defined but surreptitiously appear in the definitions of the fundamental categories of mass and energy.

Mach, no doubt, would protest against the "voluntary penury" of thought that the exclusion of action from the definitions of mechanics would produce. But to eliminate from mechanics at most points the idea of action and efficiency in particular things, and yet without warning to employ at other points the term that above all others denotes such efficiency and enforcement, is merely to confuse the matter and to disguise the logical character of what is being done. Without difficulty, in his definition of mass, Mach might, I take it, instead of the expressions, "bodies mutually acting on each other," "producing equal accelerations" (*Science of Mechanics*, p. 220) employ the conception of bodies in such quantitative relations to each other that there result equal accelerations.

It is hardest to eliminate the idea of action in mechanics from conditions of equilibrium, in which we are taught that action and reaction are equal and opposite. We are accustomed to think of a condition of strain or stress as existing between bodies in equilibrium; and the term action describes that. But the condition of strain in *us* is never one of equilibrium, but always of change, and often of violent, though not easily measured, or extended motion. Mill (*Logic*, chap. iii, p. 10, § 5) says there is a *tendency* to move in bodies in equilibrium; for, he argues, since a small additional weight will overcome the opposition, equilibrated force must al along have "exerted its full effect." But since, unless the additional weight is added, to all eternity the original forces will remain equilibrated, there is there a mere *possibility*, and not a *tendency*—nor any efficiency whatever. Only when the movement of circumstances brings some change, "impresses some force," does efficiency appear in the region in question.

It has, I believe, been thought not improbable that in so-called equilibrium we have exceedingly rapid oscillations, the oscillation itself traveling at infinite speed. This would do away with the special difficulty attending the elimination of the idea of activity in states where we now conceive equilibrium and strain or stress.[2]

17. It is necessary to consider briefly the concept energy. For that term seems to suggest efficiency, and we must see whether mechanics, using that term as it does, can properly be said to exclude agency.

The term energy is now often asserted to be the fundamental concept of science. "Every change, and consequently every process, may be fully described by a statement of the kind and amount of energy, considered with respect to time and place, that has undergone conversion." It is claimed that even all psychical processes may so be described (Ostwald, *International Quarterly*, vol. vii, no. 2, pp. 312, 313; *cf. Vorlesungen*, p. 153). What, then, is the relation between the terms action and energy?

Energy is defined by Ostwald as "*work, or all that arises from work, and permits of transformation into it*"

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[2] As to the use of the term action in the "theory of least action," I find a difference of opinion as to the significance of that theory and of those related to it. Professor Frederick Sleight, of the University of California, criticizes (*Science*, Mar., 1904) the "scheme of energetics" because it describes the conditions at the boundaries of an interval, and leaves us ignorant of the conditions within the interval. I suppose that that applies equally to the earlier conceptions of mechanics, except to those with which the theories of "least" and "modified" action are concerned. These, with the theorems based on them, attempt, I understand, to elucidate the character of the processes "*internally*" considered. The author of the article on "Mechanics" in the *Enc. Brit.* (§ 200) says that the quantity "action," A, is destined to play an important part in future physics; and I take it that its part is in the direction where, according to Professor Sleight, the theory of energetics does not avail. The environment, in the theories above mentioned, is limited, and we seem to have a close approximation to the original, proper and historical use of the concept action in mechanics. However, according to Mach, the theories in question are of value solely because they emphasize the uniqueness of the phenomena to which they apply.

(*Vorlesungen,* p. 158). Work is not here a process, but the effect (*Wirkung*) of a process, for it is a quantity (*Grosse cf.* p. 154). The German verbal noun, *Wirken,* seems to be associated rather with the effect than with the agent. The word *Arbeit,* work, commonly refers to the result; but it suggests the effort of the process that has achieved that result. It is with this suggestion of a *process* in mind that Ostwald says (*Vorlesungen,* p. 175) that *senses* react, not on forces, but on energies. But, as he commonly employs the terms work and energy, the process is only referred to, not contained in the terms. Thus, it certainly is not true that the *process* is transferable, transformable and conservable (*Vorlesungen,* p. 155). Ostwald, of course, rejects the notion that energy, as a concept, explains anything, or describes an independent somewhat, efficient and all-embracing (*Vorlesungen,* p. 413).

The definition given above seems to give energy at least two meanings. The criticisms of Mach (*Erhaltung der Arbeit,* pp. 174 *et seq.*) seem to imply that the second part of the definition should be taken as defining the first. Energy, he says, is a convenient concept for expressing the "substantiality" of work, its transferability, transformability and conservability (*cf. Pop. Sci. Lect.*, pp. 178, 184). Ostwald, however, frequently departs from this modest use of the word, as Mach (*l. c.*) and Professor Hibben (*Monist,* April, 1903) have sufficiently established.

The term energy, as Ostwald uses it, would seem properly to imply that, a certain process having been finished, there lies in the conditions of its fulfilment the possibility of another process, equal in amount and reversed in direction, that will leave things in their original condition. Or, where conditions of a certain kind are seen to prevail, the past occurrence of the first process is assumed in order to explain the possibility of a process, reverse in character.

While where, as in the case of the gradual heating of the cosmos, the reversibility is inconceivable, reference is made to an absolute zero in the light of which such reductions to uniformity and *loss* of intensity *would* mean the reduction to a *common* intensity.

The other definitions of energy also make it a capacity or possibility. Ganot calls it the "*capacity* for producing physical change" (*Physics*, § 63). Holman (*op. cit.* 29) says it is the "*power* to change the state of motion of a body." Sigwart defines kinetic energy as the capacity for work of the moving body; potential, that of a body at rest (*Logic*, §§ 73, 23). Actual, the opposite of potential energy, would be the *movement* as a continuous exercise of its energy. The potential energy of the ascended ball is a mere prevision. The ball may never fall, and no action, even indirectly, ever reverse the original motion. The attraction between earth and ball *through which we picture the potential energy* is *least* when the potential energy is *greatest*, when the bodies are furtherest apart. Until the action is incipiently reversed the energy, as posited in the ball, is not even a tendency; *it is a mere possibility*. True, the energy as a function of the entire universe assenting to the reversing, would be a tendency. But such unlocalized tendencies would be of no service in prevision.

So I conclude that the concept energy has none of the efficiency and none of the individuality of action. It seems to have an advantage over the terms previously employed in physics simply because the others, for instance *force*, had certain associations with *particular kinds* of power. Part of its apparent advantage seems to be gained, as I have suggested, by ambiguity. More than one conception, as shown by Ostwald's definition, is locked up in its apparent simplicity. But there seems to be no question that heat energy, volume energy, etc., are not things which imply connection with some particular object in order that they may be thought of at all. Energy lacks that characteristic of action. And further, energy needs something to call it out, or to determine its points of application. And so it lacks also the efficiency of action.

To sum up, then, the term energy in physics stands for a mere possibility and indicates no specially close reference, nor any return to the historical reality, the past process from which all physical calculations start. It is in no sense the equivalent of action. It in no way serves to introduce agency, efficiency, into the mechanical world. And, indeed, as pointed out in the preceding chapter, there seems no good reason why the mechanical world, the world of calculations, need try to retain or regain the concept of historic reality, unless it be in connection with the attempt to view "internally" a given process (*cf.* note 3).

In this chapter I have aimed to exhibit the antithesis between motion and possibilities of motions and things moving, on the one hand, with action, tendencies, and agents on the other, an antithesis resting on the basis of efficiency. It is my intention now to note the place of these contrasted conceptions in the natural sciences generally, the mingling therein of the mechanical and the historical notions, with the drift toward the mechanical and the ineradicable element of the historical.

CHAPTER V

ACTION IN THE SCIENCES OF NATURE OTHER THAN MECHANICS

18. General Position.—19. Action in Chemistry and in the Non-mechanical Physics.—20. In Biology.—21. Limitations of this Study.

18. By the sciences of nature I understand those that seek a knowledge of laws. The term mechanical is often applied loosely to phenomena on the ground that uniformity or law has been discovered within them. But, as we have a science of mechanics dealing with motions and with possibilities of motions, it would seem that the term mechanical should apply only to interpretations of phenomena in which the terms of mechanics are used. There is, however, in the derivation of the word mechanical the suggestion of machine or contrivance. And we may, I think, base the common use of the word in relation to certain phenomena in part on the fact that it is possible to use those prenomena as mere instruments, obedient to our will. If we can foresee phenomena, it is possible to make them, in many cases, almost as subservient to ourselves as when we, in the case of machines proper, put the parts together and set them in motion; and so we call events that we can predict, mechanical.

But, after all, such complete subservience is found only in the realm of phenomena with which the science of mechanics deals. So that the two fundamental uses of the term mechanical are really one; and it seems reasonable to object to so loose a use of the term as is common, and to insist that mechanical explanations proper are in terms of mass, motion, and possibilities of motion.

This objection and the general distinction between the mechanical and the non-mechanical sciences of nature is best urged, I think, in terms of the concept action. The character of mechanics that I have just tried to establish, that it starts from experiments and observations in which the category of action is employed, and, through analysis of these actions, arrives at the elements common to all actions, viz., motions, the laws of which proceed on the fundamental assumption of inertia, in which the efficiency, the *agency* is eliminated from the particular thing and is placed in the totality of circumstances and the " action of time," this character indicates the kind of thing that all natural sciences attempt, but which none but mechanics can fully accomplish. The laws at which these other sciences of nature arrive are always special to certain phenomena, and this fact prevents the positing of the cause of those laws in the totality of things. The law specially pertains to, and springs from, a certain class of phenomenon, be it a particular kind of metal, be it protoplasm, or a particular class of animal, or be it mind. This limitation of the law is, I find, indicated by the concept action. For that concept implies *inner* causation; and, with such special laws, the effect is explained merely by the *localization of the tendency* in a certain thing, which tendency is merely the potentiality of that effect, is defined in terms of that effect and permits of no other definition. That is, the difference between explanations offered by these several sciences and mechanical explanations is marked by the residuum of action pertaining to each of the former as each in its own realm proceeds from the concrete facts and actions of observation and experiment, through analysis of these, to the formulation of laws as general as is permitted in that realm.

But the full significance of the concept action in thus distinguishing the non-mechanical from the mechanical brances of natural science, is only seen, according to my view of the matter, when we recall that those processes which are the content of the observations and experiments of natural science, are always, just as we saw in mechanics, *past processes*, of which the observer or experimenter retains only the record, the evidence, which is evidence because it has been brought about by that past process. That is, the naturalist starts in all cases from *histories*. And his own peculiar task is the elimination, so far as possible, of the category that history seeks to retain, that marks the purpose of historical construction, as I have tried to show in Chapter III.

Now, in each of the realms that natural science has set up as separate, we find corresponding to the naturalistic construction an historical construction, the aim of which is not the elimination, but the retention of action. And the significance to which I referred above is this: that, on the one hand, in the naturalistic interpretation the elimination of action proceeds by a process of analysis of the given actions or histories, into elements that are common to many such actions, the course of which, therefore, can be foretold, and therefore in some measure controlled or utilized for the ends of man. If we cannot lift up a log as a whole, we analyze the total movement and lift first one end, and then, supporting that, the other. If we cannot direct the course of the human body as we would in its entirety, we must master the movements of organs and cells.

But, on the other hand, in the historical construction, within the same realms as those with which the naturalist deals, the aim is to discover the nature of actions of such power and extent that it is our purpose rather to understand and enter them than to control them. We are, in the several aspects of our nature, mechanical, chemical, biological, sociological, etc., elements of these greater actions. And every step in the advance of our control over the lesser elements of these actions has introduced us to a new vision of the direction and the immensity of these historical realities.

The control of the elements of the several realms of natural science is the object of a multitude of *arts*. Thus we have the arts of politics, of medicine, of the rearing of animals, of landscape gardening. Even the so-called fine arts seem to be fundamentally an attempt to gain control of our feelings and of others' feelings by applying our knowledge of the nature of the simpler of such feelings.

Now, in each of these realms, in which we thus find, associated by community of objects, both natural and historical science and also art, it seems that the historical construction, though perhaps the vaguest and least developed of them all, leads all in influence. To consider first that realm in which historical construction has received the most attention, we see that the *state* may be viewed from two aspects: as a machine created by the art of man and intended to carry out his purposes—an aspect not without its truth, surely; and, again, as an agency whose movement it is, in certain features, impossible for man to control, and which he can only in part foresee. In its former aspect, an aspect which the natural science and the art of politics seeks to extend, the state demands tax and toil and tribulation of its constituents because of the promise it contains to give again more than is rendered to it. It is this side of the state that Western civilization, in spite of Hegel, tends now to emphasize. Whereas in Japan, and perhaps in Russia, there seems a disposition to recognize that what is of greatest worth in the individual comes from his willing participation in the vaster and more endurant purposes of the state, that man must refashion his private designs until, regenerate, he can freely and gladly gain his real goal and life in the subordination of whatever was merely individual. But, in theory or by polite fiction and good intent, at least, we also have regard to the ultimate and more sublime purposes of the state, and subordinate our consideration of the means to bring about a fitting commonwealth to the consideration of what that commonwealth is itself moving to accomplish. And that goal of the state is derived from a study of the past action of the state, from its history, not merely as an isolated community, but as an agency within the greater agencies of civilization, humanity, &c. The action of the state must co-operate with those greater actions, and ours with that of the state as a whole.

So also in the sciences and the arts of medicine, &c., we see their subordination to the historical conception of the general intent and purpose, e. g., of bodily activity, as revealed by the nature of our long and splendid ascent from an humble origin, or to the historical account of the long process of domestication of animals or of the special culture of plants. And the formulation of the *laws* of philogeny and ontogeny have regard to the *single development* and history of life of all kinds upon the earth, in a direction that can in large measure be defined.

This process of continual development, with which history deals, necessarily includes and emphasizes the uniqueness of the events that have contributed to it, as in their course they have introduced new features into the world; and historical construction, therefore, also retains this uniqueness. The connection between these unique elements and the whole advance cannot be subsumed under laws, simply because they *are* new and unique; but they can be, and are subsumed as *means* and *ends* to each other in a reciprocal teleological relationship, as explained in Chapter III. It is thus that Erigena's philosophy is related to the development of Scholasticism. What, then, could be meant by asserting that Erigena's philosophy occurred entirely in accordance with universal laws?[1]

Such assertions of the mechanical nature of historical developments seem to me not only meaningless, but to lead to the obscuring of the real purpose of historical construction. That there was a cause for the development of life, in the direction in which it has developed, is not denied. But all that can be said of the cause is that there existed a potentiality to produce this among other forms of animal evolution; we may *localize* this tendency thereto within certain limits, and try to show at various points how the potentiality took more and more definite shape. But the important thing for this unique development is to show how there existed a reciprocal teleological relationship between the elements of the whole action. For we are elements of the same action; and it is our province, not so much to transform it, for that we can do in but small measure, but to understand it, and learn to form our sympathies in accordance with it, that with loyal hearts we may, in furthering it, extend our freedom and activity within it.

In the following sections, then, we shall note the residuum of action that marks off the several fields we here deal with from the mechanical realm proper, we shall note the historical aspect that pervades the sciences of nature. And we shall also briefly note the nature of the historical construction proper pertaining to each of these realms as we come to them, since thereby the antithesis between historical and natural construction will become clearer.

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[1] This statement comes from Eleutheropulos's *Wirthschaft und Philosophie*, vol. ii, pp. 82, 83. Similar statements abound in Haeckel's works, with regard to the development of animal life from some primitive one-celled parent form. (*Cf. Evol. of Man*, vol. ii, §§ 31 and 41.)

In these sections it is necessary to speak continually of reaction, as well as of action. The former word is used in many different ways. In mechanics, as I pointed out, it is used to designate some *action* opposed to another, which is equal to that other simply because it keeps that other in abeyance or has brought it to an end. If the first action had not been present the second would have occurred, equal in amount and opposite in direction. But in the proper use of the term reaction, in which it is opposed to action in meaning, and is not simply a reverse, a reciprocal, or an opposed action, the reaction is the "receptivity" of the universe, a process indefinable except in terms of the action to which it is the reaction. But this reaction, for practical purposes in natural science other than mechanics, is limited to a certain portion of the universe. But still it is definable only in terms of the correlated action. It corresponds in this use to the old term passivity, which is defined by Leibnitz as follows.

"A created thing is said to act outwardly in so far as it has perfection, and to suffer in relation to another in so far as it is imperfect; and one created thing is more perfect than another in this, that there is found in the more perfect that which serves to explain *a priori* what takes place in the less perfect; and it is on this account that the former is said to act on the latter" (*Mon.*, §§ 49-50). Thus, when, e. g., I write, the receptivity, the reaction of pen, paper and ink, or of muscle, is to be explained, with any approach to adequacy, only through my action. To say, as the mechanical use of the term requires, that their reactions with that of the air and other circumstances are equal to my action, is to deprive my action of nearly all its significance, and to leave utterly unexplained, and surely on that basis unexplainable, the most important connection of the several events.

ACTION IN CHEMISTRY AND THE NON-MECHANICAL PHYSICS

19. These realms of natural science I class together because it seems that *action* has much the same place in all. By non-mechanical physics I mean that branch of science that deals with light, sound, heat, electricity and magnetism. I exclude gravitation because it seems that that is the one aspect of matter that is treated quite quantitatively and mechanically. It is true that we distinguish the specific gravities of bodies, and so seem to ascribe some specific property to things in terms of gravitation; but that view of the matter is set aside by interpreting this specific property as a variation due entirely to the quantity of matter, that is, to the mass of the body. This makes the body entirely receptive. The more mass it *is*, the more attraction pertains to it, on account of circumstances generally. Gravitation is taken to apply ultimately to bodies which are all alike in respect to it; the differences in effect depend on *external* relations.

But, in the case of chemical substances, of heat, &c., there exists in the thing or in a certain limited tract properties that spring from the nature of that thing. Ostwald's lecture, *Elemente und Verbindungen,* ("Annalen der Naturphilosophie," iii, 4) is a recognition, I understand, of this fundamental distinction between chemistry and the mechanical interpretations of chemical phenomena. The attempt to reduce chemical differences to spatial arrangements of similar particles leads, no doubt, to greater ease in controlling the qualitatively different phenomena of chemistry, but those qualitative distinctions are, after all, what is valuable, and they are not the same things as the corresponding spatial arrangements, supposing the latter were in all cases discovered. Rather they remain the product of the specific nature of the things in which they are found.

So, too, heat is not itself a "mode of motion;" the motion, e. g., travels with the luminous rays through a pane of glass, leaving that cool, and heats the objects on the other side. But the heat did not travel through the pane of glass, for that was not heated. Whether a body is hot depends on what would happen if a thermometor of standard construction were brought in contact with it. And that depends on the absorbing and radiating powers of the body in question, as well as on the circumstances in which it is or has been. That is, heat is the display under certain circumstances of certain specific properties of bodies. This is obviously true in the same manner of light.

In the case of electricity, there is a tendency to ascribe it to little bodies, electrons, that revolve round, or else constitute, the supposed atoms of mechanics. But the property residing in such electrons clearly is specific. If gravity by any chance is to be explained in terms of electricity, then we may perhaps regard the latter as the common property of things, and gravity, then as a result. That would establish a new science in place of mechanics as the science of ultimate generality. At present we treat electricity as a property specific to certain things in certain circumstances. At least the degree of electrical capacity rests on such specific properties, not yet explained quantitatively. So, too, with magnetism, though here the differences between bodies do not seem to be merely of degree. Dissolving power, and solubility, may be considered in like manner for the purposes of this essay.

In the case of all these powers we speak of action, as the action of heat, light, sulphuric acid, &c. Clearly, from the starting-point of ignorance, the question is, who or what caused this particular effect, the smart, the dazzling, the uplift of pieces of paper, erosion of a metal waste-pipe. The process for which the cause is sought is, first, then, an action, of which the agency is as yet undetermined. But, when the source of such effects is found, there stands out, with regard to all the forces considered in this section, the fact that it is merely a property of a thing and not something of itself, a fact that would remain true if the corresponding motions of ultimate particles were discovered for each of these powers; for the motion would not be the specific power in question. And, in the case of all the properties considered in this section, *there is this peculiarity,* that the exercise of that property is its destruction. A body that has been hot long has thereby lost some of the heat that it had; an acid that has operated has lost some of its power to operate. Though we may say that heat, when it has reached the kindling temperature of the heated body, reproduces itself, it really produces heat in other bodies, not merely through radiation but through the medium of chemical activity. The original heat vanishes; the proof of which could be found in the condition of surrounding bodies. There is *in* the body, therefore, in virtue of these specific properties, merely a *possibility;* the action, as the actual heating of things, or the electric shock is the realization of the possibility. It *is,* however, an action, that is, the fulfilling of a *tendency,* because in a certain limited environment are found all the conditions of its realization, and in their propinquity may be seen the tendency which is thus fulfilled. This tendency is found always in a limited extent, because it implies the relation of certain properties specific to certain things. That a body should be hot does not require the co-operation of the universe, but the presence of one other body to which it may communicate heat, losing more than it gives. Here, then, we see the residuum of action that characterizes these realms of science, and makes impossible for them the purely mechanical view. The specific properties of the limited extent above referred to mean *inner* causation. The cause lies within that extent, and can only be explained as a tendency.

The use of agency in the sense of instrumentality is common in this realm. The several forces, as those of the atmosphere or of the internal heat of the earth are called agencies, *means* towards the growth of the earth, as depicted in its history. This is of course quite a different use of the term agent, *to which the concept action does not correspond.* The term reagent, used by the chemist, also denotes instrumentality. A reagent appears to be a body introduced into a set of unknown circumstances to determine what those circumstances are; or else, the most easily manipulated of the elements needed to secure a chemical process, the formula of which is known, and called a reaction. But a chemical *agent or action* is spoken of commonly where the cause and character is uncertain or uncontrolled.

Contrasted with the movement of the natural sciences here described, which tends away from the concrete action from which observation, as we just saw, starts, to treat of mere possibilities, properties, to analyse all these actions into certain ultimate actions, whether of the elements of chemistry, or of the elementary forces of physics, we see the attempt, at present little more, to understand the nature of the movement by which a cosmos of extreme heat and a minimum perhaps of chemical action, goes through the stages of diminishing heat and increase of variety of chemical action to a stage of equal temperature everywhere, with no chemical action. At least that seems to be the common opinion of the nature of the action in which the several actions of heat &c., are merged. To try to control this great action except in minor details were foolish. One has but to understand it, and to understand our place in it, and to see whether it is perhaps part of some greater action that we can really see the good of. For the cause of this movement it were foolish to ask. It is the sole revelation of the tendencies wrapt up in it. We do not give the cause of it by noting that certain aspects of its general character are revealed also in its parts.

This history is very different from the history of the world or universe as made up of moving atoms without qualitative differences, of which the nebular theory is a part or an approximation. From a history of the latter character we could never learn what heat and light are. But, just as the evolution of the atomic world, whether it take the character of integration of matter with concomitant dissipation of motion, or whatever character it take, just as this evolution dominates all conceptions we may have of the value of the machines we build, so this evolution of the world of specific properties tending toward their own annihilation dominates the several arts by which we would make use of heat, light, &c., &c.

ACTION IN BIOLOGY

20. The place of the concept action in this realm of natural science is much more clear than in the one just discussed. I shall, first, however, discuss a use of the concept that seems opposed to the definition of action and reaction given in section 18.

Spencer, in his *Principles of Biology,* gives one chapter to the "action of forces on organisms," and the following to the "reactions of organic matter to forces." Now the forces acting on the organism are comparatively simple, the reaction of the organism to these forces relatively complex. How is it here true that, as Leibnitz's definition requires, the reaction can be explained through the action, and not conversely? For we do continually speak of some simple force, as a pin-prick, as the stimulus, the action of which excites a complex reaction of the organism.

Now we may speak of the action of forces on an organism in many ways. First, in the cases where the force is one that does not call for an organic response at all, but for a mechanical or a chemical response. Spencer, in section 23 of the work mentioned, says that this is the way in which he uses the expression; *he admittedly leaves out the essentially biological view.* In such cases the growth of the organism is not concerned, more commonly its injury. The effects of poison, darkness, and the attacks of other animals are examples.

But, when we designate the force a *stimulus* we use a biological term whose implications are many and various. By that term we already assert a certain relation of the force to the organism. For the same thing is not a stimulus to all organisms. Sometimes we use the term having in mind the growth of the organism; the stimulus is what that growth needs, and one activity of the organism, the selection of a particular element of the environment as the stimulus, contributes to the activity of another part which responds to the stimulus. Thus are related the sense of smell and the flow of saliva, the capacity to see a situation and to seize it. Thus praise stimulates man, both because he is susceptible to praise and because he can direct his actions deliberately to secure it. Here the action of the stimulus is true action, for the praise or the food or the situation are not mere mechanical things, but are means to a given end, and contain the end in themselves potentially or they would not be stimuli. The reaction of the organism to the stimulus is not so easy to localize as the stimulus, is less definite than it, and contains as its deepest significance only that end already contained in the stimulus, *as such.* Hence the action and reaction here correspond to Leibnitz's definition.

The same sort of argument is to be applied where the stimulation has in view rather the aim of some experimenter than the good of the organism on which he operates; or where it is held to be part of a greater action in which the organism in question is an element, being brought within the larger action, e. g., the development of a given species, through the instrumentality of the stimulus.

While in biology, therefore, the term action has uses that fundamentally belong to the realms of natural science preceding, yet in the idea of a stimulus there seems to be a use distinctive of biology. One thing strikes us to distinguish the biological use of the concept, viz., the difficulty, and the necessity of localization. In chemistry and non-mechanical physics the action takes place throughout some body of a specific character. But, in biology, the action seems to be analysable into many different features, and there is a constant search for exactly the *place* of each. In any element in which a certain action is located, there appears growth with *differentiation*, and in consequence there must be sought out, not only the locality for the newly differentiated functions but also that of the source of those functions in the apparently undifferentiated element. Thus the cell undergoes analysis without end. And at every stage certain specific properties are "explained" merely by *localizing* them in a certain kind of body. That body is in the strictest sense an agent, and its movements are actions, explained only by *inner* causation, by tendencies posited within it.

Not only is this character of inner causation apparently not to be eliminated from biology, but there seems to be equally essential to it the idea of teleological co-ordination of the parts. Consider the theory of mitosis. Here we are told the "daughter chromosomes" are pushed apart by continually lengthening fibres (spindle-fibres, significantly called "pushing agents"), which grow out from the centres and dovetail, each being thereby connected with fibres from the *opposite* side. (Wilson, *The Cell*. p. 75). To explain this co-operation by the "vague dynamical" phrase of "interaction" does not contribute even an idea. All that can be done is to state that they occur within some larger organ in which is localized the capacity to secure such co-operation. Professor Wilson, (pp. 327-9) notes the various phrases that have been advanced in explanation, "co-ordinating" or "guiding power," "predetermined polarities," "formative substances," and is surely right in asserting they contribute nothing. The synthesis of the lesser actions in a wider action is a fact which can be analysed into elements which again can be in measure *placed,* but it seems that the specific properties and also the teleological co-ordination of the specific properties in a specific synthesis can be explained only by the concept of inner causation and of tendency and action. That these properties are specific not merely to one individual but to a class does not make them mechanical. They are not universal; and the basis of speciality can not be reduced apparently to universal terms.

Indeed it seems that Professor Wilson must be right in asserting that "the study of the cell has on the whole seemed to widen rather than to narrow the enormous gap that separates even the lowest forms of life from the inorganic world" (p. 330). If we adhere to the strict definition of mechanical, then to interpret the cell life mechanically would mean to discover in the first place what are the minutest parts which, in the course of multiplication through infinite time, may come to have separate movements. How should we know these if we met them? Further, the mass, the direction and velocity of movement of each of these must be known, and the relative position of all; also their elasticity. More, the effect of an infinite environment must be allowed for. Other difficulties occur; but, without working them out, there seems to me in those mentioned sufficient ground for doubting whether the movements of cell life will ever be entirely calculated. But, even if they were, the specific properties pertaining to the different motions would not be mechanically explained. In fact, if, as I understand, mechanical interpretation means explanation of events in terms of laws of complete generality, it can apply only to phenomena of complete generality, i. e., only to motions. But, though life, color, love and hope may be accompanied by motion they are not motion and cannot be explained by motion. The concept of inner causation, of tendency and action must be employed to the end in explaining them.

In the events, then, with which biology deals, there is a very distinct historical element, which persists throughout the analysis of those events into lesser and supposedly more simple processes. These processes are always actions; the explanations biology offers rest on the fact that a certain kind of body acts in a certain manner. Moreover, in all, or very nearly all organs and organisms, the lesser processes, when united in the larger, from which they have been abstracted, stand in the reciprocal teleological relation which is the form of connection displayed in the life of that larger, which life is in every sense a history.

But in the analysis of these larger actions into elements there are noticed not only uniformities but also truly mechanical relations between these elements, or between them and the whole. For example the supply of the circulating fluid to the several parts is a matter of hydraulics, in part. But the explanation of that supply in its entirety and its complete adaptation to the growing or at least ever-changing organism rests on the activity of that specific organism as a whole.

Phylogeny deals with the development of races and not of individuals. It is not historical science, because it seeks to discover the laws common to all developments of race and species. It introduces, however, another agency into the biological realm, and a further subordination of mechanical to teleological explanation. It seems to me a curious confusion of thought in Haeckel that he should consider the theory of correlation a triumph of mechanical explanation. The generality of the law is indeed remarkable. But the law itself remains a riddle; and it is hard to think of any biological phenomenon that presents greater difficulties in the way of interpretation in terms of mass and motion.

Quite different from this study of the laws of race development is the historical enquiry after the nature of the unique development of living things upon the globe. This branch of historical science seeks, not the unity of a common character but the single movement towards one and the same goal. It is concerned not only with the total development but also with its parts, e. g., with the development of man from lower creatures, and of civilized from uncivilized man. But it is not concerned primarily with resemblances between these parts; rather with all the fulness and uniqueness of each part, and with the relation of each such part to the whole. It seeks a unity of action; not of law. And the action is one that characterizes living things as such; men not only *live* in the biological sense, but are social, aesthetic, philosophical; the history of life is concerned with man and all other things in this first aspect; for it the other aspects are subordinate, just as the mere motions of things are subordinated to the view of things as living. Perhaps the *economic interpretation of history*, when fully worked out, will be this *history of life*.

Sigwart (Logic 100, 15) raises the difficulty that all such teleological developments imply a subject which persists through the "constantly progressive changes of form," and constant differentiations; for thus only can they be explained. Now where is the subject of such "histories of life?"

The implication of a *subject* is precisely my contention.

Sigwart's difficulty springs from a mistaken demand for a spatial compactness in such subjects resembling that of an organism. In our every-day talk of society, the nation, the "world of letters" &c., we refer to subjects that meet the definition of agency without essentially possessing such compactness and tangibility. That definition I have frequently suggested and may again sum up: a plurality of objects united in fulfilling an end which exists as a tendency in all collectively, in virtue of the several tendencies being fulfilled in each one, these several "fulfillings" in turn being dependent on the fulfilling of the whole.

A more fundamental objection is that such agencies are often matters of individual insight; even where all agree on the existence of an agent bearing a certain name, as a nation, they describe the agent differently, ascribing to it different purposes or ends. How can such matters of opinion be matters of science?

Natural science, concerned with general laws, aims at general assent at every step. Historical science, dealing with actions as unique constituents of one universal action or development, rests on the capacity of certain individuals to perceive and describe what is rare and hidden. This historical insight rises above opinion and is science in virtue of the breadth of vision, the exact definition of the elements, and the closeness, clarity and manifoldness of the relations between them and the whole. Its *truth* depends primarily on the points of connection it has with the present fact, as that fact is evidence of the processes that brought it about, according to generally accepted rules for the interpretation of evidence. Unless such points of connection are many the system has no *breadth*. But the *worth* of the historical construction depends also on the nature of the agency discerned in those processes as a whole, discernment which altogether goes beyond such generally accepted rules. We may deny *worth* to a historical construction; and none can decide the point save for himself. We may deny its truth; then it is not historical. But if only the construction is highly organized in the sense just described it is surely scientific, though not naturalistic.

Thus the history of life is contrasted with the natural science of biology. In the latter the aim is to abandon historical categories; to substitute mechanical. But there remains throughout that natural science the use of the concept of action and inner causation to explain specific qualities of living things and the reciprocally teleological relations of organs and organisms.

LIMITATIONS OF THIS STUDY

21. In the sciences of sociology and psychology my study of the concept action has opened for me most interesting but most difficult questions. These sciences have no accepted definition; nor are their tendencies altogether clear. To explain and defend my view of them would prolong this essay unduly and, owing to certain points not yet cleared up in my mind, would delay its publication more than is convenient. The use of statistics, especially in tables of correlation, seems to be the attempt to discover " varieties " of mankind, by the specific nature and agency of which, in various combinations, the complexity of social phenomena, and of the phenomena of the concrete individual personality may be unraveled and " explained." Action is here used much as in biology, but different methods are used to localize actions. I must neglect also to speak further of the antithetical historical sciences of biography, and of social evolution; I may refer to Chapter III., and also to section 18 of this chapter for a description of these.

CHAPTER VI

REMARKS ON THE LOGIC OF HISTORY

22. ON THE THEORETICAL LOGIC OF HISTORY.—23. ON THE PRACTICAL.

22. I now attempt an outline showing the interconnection of all the concepts I have employed, in a systematic treatment of the logic of history. This enables me to give a general view of the subject of the essay, and also to consider one or two difficulties that so far I have rather slurred over.

And first I shall present a scheme of these concepts. I do this with the hope that I shall be credited with a sense of the tentativeness of such an outline. I simply wish to make clear what I have tried to do. This scheme covers what I suppose to be but one part of the logic of history, namely the theoretical. I shall speak briefly of the practical logic in the next section.

1. Definition of history. Compare Chapters I. II and III.
    (1) Limiting definition = the *recorded past*, or the *past of evidence.*
    (2) Definition of its content = *action*. (Deduced from above.)
    (3) Definition of its purpose = *action*. (Deduced from (2).) Contrast between the unity of *law* and the unity of *action*.
2. Fundamental concepts of history.
    (1) In terms of the limiting definition. Involves a logic of *time.*
        a. Reality of the *past* as contrasted with that of the *present* and *future.*
        b. Reality of the past as *derived from* the reality of the present. *Identity* and *continuity* of the former with the latter. *Impenetrability* of facts in past time.

- *c.* Significance of the present derived from its past.
- (2) In terms of its content. Involves a logic of *cause and efficiency.*
    - *a.* Action, the *fulfilling of a tendency.* "*Inner causation.*" (Chapter II.)
    - *b. Reaction. The indeterminate environment as a mere means.* (Sections 5 and 19.)
    - *c. Interaction* and *passivity, plurality of agents,* and inference of passivity. (Section 8.)
- (3) In terms of its *purpose,* the exhibition of *activity.* Involves a logic of *freedom.*
    - *a. Co-operation. Reciprocal teleological relation between whole and parts.*
    - *b.* Limits to co-operation. The "*action of time.*" (Sections 8 and 13.)
    - *c.* Relation between ultimate ends of the chief historical agents. (This section and Chapter VII.)

3. The special concepts of history. Peculiar to different realms of historical construction, corresponding to the several realms of natural science. E. g.: (Section 22).

- (1) Of the distributions of *matter and motion.*
- (2) Of *chemical* and *physical* (non-mechanical) powers.
- (3) Of *natural forms.*
- (4) Of *life.*
- (5) Of *societies.*
- (6) Of the *totality of action.*

4. The relation of history to:

Ethics and education. (Chapter VII.)
Art. (Section 18.)
Natural science. (Chapter I.)
Metaphysics.

The first of these subdivisions, that concerned with the definition of history, I shall not now discuss, as it has been the theme of most of this essay. As to the second division, I would briefly consider the difficulty in defining the present fact, which is evidence of the past fact, of the process, the action, the history that brought that present fact about.

The sort of "present" that serves as evidence in history is not a mere immediate perception. For we may ask whether the immediate perception represented truly the present fact. The present fact, obviously, must *have been* immediately perceived; but in addition to this character, that it is the content of a past experience, it is also the content of a possible future experience. Present facts are ordinarily the object of repeated perceptions; repeated, perhaps, many times in a few seconds. And the assumption in describing them as *present fact* is that the perception may still again be renewed.

The term fact is derived from a past participle, and seems to denote fundamentally something that certainly *has* occurred. The certainty of the events that explicitly are past rests on connection with the so-called present fact. The latter is *fact,* because its content *has* already been experienced; it is *present* because it may *again* be the object of immediate perception. So that ultimately the certainty rests on connection with some immediate perception, either of the *effect* of the fact, as in the case of historic fact, or of the actual *content* of the fact itself, as in the case of present fact.

Logical puzzles galore may be raised as to why a present fact is evidence of a past fact. We may say that the past event is *identical* with the present, for the latter is the completion, the end of the former. They are therefore one. Their character is of course different; otherwise, the end and the middle and the beginning of the event being the same, the event would have been no event; nothing would have happened. But, if they differ in character, in what sense are they one? To say they are continuous with each other merely states the form of identity in time. The degree of resemblance is sometimes the *evidence* of the continuity; but not always; in no case *is* it the continuity; and it is hard to say what the latter means, or what is the absolute test of it, the basis of our certainty of the connection of past with a present fact.

But the sense of the efficiency of the past fact to produce the present rests on this sense of identity; on the conviction that the beginning and end of the process are one and the same process. A conviction that is very strong, however vague it may be. Hence arises that massive character of the past, of history, which may be called impenetrability. As surely as but one piece of evidence can occupy a given spot of the present so surely but one source and explanation of that present is *true,* however many may be possible; there is one process of which it is the completion; and that process, though it has ceased to be, is fact, simply on account of the *identity* asserted between past fact and present evidence.

The remainder of the second section I have already discussed at some length. The third section presents many difficulties which are of practical importance, though they have received comparatively little attention. In section 20 I emphasized the fact that in the perception of the greater unities of action the insight of the historian cannot be submitted to rules of evidence. These govern perception of the lesser processes that brought about particular pieces of evidence. They cannot tell us the nature of such a unity as the Holy Roman Empire any more than psychology gives us the unitary character and personality of any one of the numberless individuals we meet. Such unitary processes as that of the earth, of a nation, of a race are, often without clear perception of the significance of the act, frequently referred to such greater and supposedly unitary processes as humanity, civilization, nature, &c. Kant, Hegel, Comte, Spencer, and others, have tried to get and give a clear idea of one or other of these. In so doing their chief contributions were the formulation of *concepts* of reason, of nature, of freedom, of life, of humanity, &c.

Beside these there pervades historical construction the idea of a universal history, of an ultimate unity of action. Such words as Providence, universe, " action of time," &c., imply the conception of a process of which the processes of " reason," nature, &c., are elements or parts. Attempts have been made to identify the universal movement of things with that towards reason, freedom, perfectly adjusted economic conditions, &c. The failure of all such attempts suggests that it were better (1) to define clearly the concept of each such historical unity, and (2) to note the logical relation of one to the other, and of all to the concept of the totality of actions.

For example, Kant, in his Critique of Judgment, asserts the goal of nature to be beauty. To this unity of nature, it is true, he denies objectivity. But this denial is equally valid, as he says, for the existence of an end or goal in any organism. The concept action, however, implies the concept of fulfilment, of tendency, of end. What objectivity, therefore, exists in history, should apply to this goal of nature, if Kant's account is true. He, himself, in his "*Idee zu einer allgemeinen Geschichte,*" gives the purposiveness of all history just the supposititious objectivity he assigns to nature.

Beauty, it is true, is an idea. So, too, is time; and there is no more reason to deny the partial realization of beauty before the existence of conscious beings, and its perfect realization when all life shall have ceased, than there is to deny the rise and disappearance of consciousness in time.

Man's sense of beauty changes its content with the ages. The human form is not to us, as to the Greeks, the most beautiful object. Only pedants and sensualists dare assert that it is. The finest buildings, too, pale in beauty, for us, before the glories of flower and hill. Man's idea of beauty has changed with the climate where civilization flourishes, and with the power he has gained to traverse and modify land and sea. And what the standards of absolute beauty are no one can tell. Only we may assert that it cannot be other than that form to which nature tends. For a mind to which nature is unbeautiful we know is distorted. Hence, along with the varying content of the idea of beauty, goes a concept, true to the Greek as to us, to Plato as to Kant, in some feature that makes it a common term of thought, a feature that unites it with the supreme historical category of the good, with the ultimate fulfilment of things, in that aspect of that fulfilment which is gained through contemplation of forms, their measure and symmetry.

Man, then, enters the general historical process of nature, or of forms, of the realization of beauty. His idea of beauty at any particular time is a means by which nature subordinates his powers to the realization of her ends. Differentiation, e. g., appears to be essential to advance in beauty, and everywhere man brings variety into the primeval landscape. And that variety man loves. He must indeed produce it to live. But through cultivation of a sense of beauty, and in the recognition of the worth of nature's final purpose, he may freely break the monotony of the woods with pastures, grain-fields, roads and cottages, and even freely die, knowing that by death has been and will be preserved the freshness and variety of natural forms.

The clarification and inter-relating of such concepts as Beauty, Freedom, Need and Supply, Life, Adaptation, Justice, Love, Culture, &c., means the rectification of the vague conceptions that underly and color all histories, and is a branch of the theoretical logic of history. Subsidiary concepts are those of nationality, state, people, family, organism, society, personality, &c. Such a work as Professor

Seligman's "The Economic Interpretation of History," is an example, in part, of what I mean. It suffers, I venture to think, from the mistaken insistence on the question of the causal dependence of other lines of historical development on the economic. For to say that an event enters into the chain of economic causation is surely to say that it is an economic event, and so to assert the causal dependence of one aspect of a nation, e. g., on another, is to reduce all aspects to one. But there is of course in fact a line of causal development, connecting philosophies and religions for example, that is not economic. The problem is the logical relation of the ends or purposes of such developments.

The comparison between the various developments indicated by such concepts must be an *evaluation* of them, since they are to be compared as aspects of the one great movement by which the world realizes its own tendencies, or nature, i. e., of the fulfilment of the *good* of the world.

ON THE PRACTICAL LOGIC OF HISTORY

23. The practical logic of history, it seems, may be divided into the " inventive " and the " constructive." Books on historical method have dealt very largely with the former. Droysen gives considerable attention to the latter. The rules of interpreting evidence are, so far as they are definite, the quotation of natural laws. There are certain practical maxims as to the credibility of authorities and the attitude of the investigator which lack the analysis that would justify their inclusion under psychological laws. But as these maxims become definite they must become mere statements of natural laws, declaring the nature of the cause of which the present fact, the evidence, is the effect.

These rules concern historical invention. The logic of historical construction includes such a discussion as Droysen's treatment of the " *forms* " of history, the several unities into which the lesser actions of history enter.[1] Such a discussion deals, as his does, chiefly with the generally accepted unities, and the relations of one to the other. Hence it differs from the " theoretical " logic of the specific concepts of history, in that the latter aims at a completeness of synthesis of the several forms or concepts and therefore tends to be individualistic; while the former seeks rather to arrive at such assurance as is given by community of belief and practice among historians with regard to such concepts.

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[1] Droysen's *Outlines*, § 55 *et seq.*

CHAPTER VII

HISTORY AND ETHICS

24. Ethical Construction.—25. Dependence of Ethical on Historical Construction.—26. Further Relations between Them.

24. In this chapter, as in the former, I introduce a subject that needs for its proper discussion a volume, and demands so wide a knowledge and so careful analysis that I half regret that some consideration of it seems essential to rounding out this essay.

Droysen believed that history, and, especially, historical science and construction, presents the material of ethical life. I have tried to show that historical construction is a thing much wider than Droysen supposed, that it deals with the earth and all animal life as well as with humanity, the family, the nation. But, so far from this extension of this term indicating a separation between historical and ethical construction, I think it indicates a most intimate union; for, in the last few decades, we find that with a growth of the ideals and actual productions of historical science to include all realms of action there is a tendency to extend also the scope of ethical obligations, to recognize that man has duties to all living things, and even to the very landscape of which he with his belongings forms a part.

The term action applies not only to past events but also to anticipated performances. In these latter the term signifies, of course, that to imagination the process has been completed and is the object of retrospection. A tendency towards the completion of a process either complete or thus imagined to be complete is an activity.

It is with such anticipated actions that ethics is primarily concerned; hence it depends on history, on the record of past actions, for the material with which to construct future actions. This initial dependence of ethics on history is so inevitable that a failure to recognize it need do no harm.

But since the imagination constructs future actions without immediate dependence on what *constructions* the past actually has to offer, it is to be considered how far a science of ethics must submit the anticipated actions, with which imagination presents it, to comparison with the actual past constructions that history also offers. For ethics is concerned not with actions merely imagined, but with those *anticipated;* and this anticipation implies that the historic past is to be the past also of which those imagined actions are to be the continuance.

There is a type of ethics in which this dependence is a minimum. This type asserts the test of goodness to be some subjective state of mind in the doer or in others, whether that state be pleasure, happiness or a recognition of obligations. Now such a test can be applied to one's own acts or to those of others without any regard to the greater unities of action with which historical construction deals.

But this type of ethics, it seems to me, is a branch of natural science, and indeed of sociology. For the following reasons: It does not of itself prescribe a definite action in any case, but asserts the *general conditions* of acts that are good. It is true that some have regarded the states of mind here described as ends in themselves. Kant, however, who is often quoted as justifying this latter belief, in fact explicitly repudiated it (Intro. to Meta. Ele. of Ethics, XII, A. & B.) And the fruit of asserting such states of mind to be the goal of action has been, in the case of hedonism, that false antithesis of egoism and altruism that lands one in profitless paradox; while, in the case of "formalism," I doubt whether any one has attempted to base a system on it. Its fruit, one must suppose, would be a constant search for opportunities of "self-mortification," until it were found that that search must land one in the paradoxical conclusion that the worse one's natural desires are the better chance one has of shining with moral glory. I conclude, that these states are not ends in themselves.

The end, therefore, not being set forth by this type of ethics, must be presupposed by them. And knowledge of the general conditions of good actions is a knowledge of the *means* of bringing about that end. Thus it has been asserted, apparently correctly, that the sense of obligation is a means to produce the subordination of impulse to reason, of isolated to co-ordinated action; and that these latter, reason and co-ordinated action, are means to the preservation of life and of society. Again, there seems to be a close correlation between pleasure and activity, between pain and inhibition. Hence the presence of pleasure, especially if of a permanent character, is an indication of activity, and the observation of what actions produce pleasure is a means to secure activity. Thus these states of mind are *general conditions* the knowledge of which may lead to the employment of the right means to secure the proper conduct of members of society, or to secure actions conducive to the preservation of the individual life. But neither of them tell us what the proper end and good of the state or of the individual is.

Contrasted with this type of ethics, which thus is seen to be a branch of natural science, seeking generalizations, is the normative type that asserts a certain end to be *the* end. In this teleological type of ethics, of which we have examples in Plato and Aristotle, and of which the present age affords abundant illustration, common opinions are indeed cited;

but the conclusions are not arrived at by counting heads, nor by generalization. Nor is it true, it seems to me, that, as Professor Mezes asserts, ethics is a normative science because it seeks to define its peculiar concept. In the first place that would not distinguish it from the sciences of law. Mechanics is concerned just as much as is ethics with definition of its peculiar concepts. Further, Professor Mezes himself, like almost all writers of ethical works, lays down as good what seems *to him* to build up a consistent system of ends, without showing that any one quite agrees with him. His conclusion is ultimately an individual one, in spite of his protestations.

In such normative ethics the end is either statical or dynamic. In Aristotle we see both blended. The ideals of the high-minded man and the philosopher represent the former; the habit of bringing desire under control of reason the other. So, also, in the great systems of ethics associated with the names of Confucius, Buddha and Christ, we have held up as ends, both the *ideal,* whether sage or saint, and the *way.* The latter is an *end,* for it is in itself good, even though the *ideal* be unattainable or incomprehensible or a mere negation of conduct.

25. What I have called the static ideals of normative ethics cannot be said to be in a significant way dependent on the constructions of historical science. Confucius, Mahommed, Socrates, and Jesus—the life of each of these is a model and illustration of a given ideal; and what unity of action is in that life is a history. But it is not the unity of action in such lives that makes them models—not the fact that in their whole life the several actions were co-ordinated as means to the progressive fulfilment of a given end, but the fact that in many different ways their lives exemplified the attitude of the ideal. It is the unity of character, not of action, it is the artistic, not the historical unity that here is important to ethics.

But these static ideals are not apparently applicable by common men without the medium of historical construction. On the one hand we need intermediary narratives of the lives of men that have attained the blessed from an unblessed state. Such pilgrim's progresses are historical constructions, or imitations thereof. Then again the disciple must know himself, and before stepping into a line of anticipated action must study his own past to determine its point of contact with that future. Such dependence is, however, more immediately obvious where the way, the pilgrimage itself, is denominated an end and a good, as in the dynamical ideals referred to.

Further dependence of ethical on historical construction appears, when we remember that most of the dominant ethical ideals have meant the construction of a new society. Christianity did not address the Jew as a mere individual man, but as a Jew, as a member of a nation, as a participant in a line of action that was supposed to move steadily in a certain direction from the days of Cain and Abel to the present, and even to an end not yet consummated. Christianity demanded of the Jew that he should form a somewhat different idea of this historic action in which his own life appeared as part. Because of that change of historic conception he was called on to change himself. So Augustine addressed the citizens of the Roman Empire, bade then forget the outlook of Livy and Polybius, for whom the march of Rome's dominion was what gave meaning to the passage of the centuries. They must think this career of earthly conquest a mere incident in a subsidiary line of action, the end of which was destruction, and the whole meaning of which lay in its contrast with the persistence under many forms, and with the steady advance of the earthly image of the City of God.

So in more recent days Herder and Kant and Hegel and

Spencer have grounded their belief in certain systems of conduct on a historical construction, in which they present the individual man as a member of a greater action which informs us of the character of the activity proper to him. Thus again Nietzsche tried to recast our conception of history in order to recast our ethics.

In Aristotle we see the neglect of this dependence of ethical ideals on historical constructions. In his *Constitution of Athens* he treats the history of that state as a steady decline. And I do not know that anywhere he speaks of a wider movement of men towards a better state with which the wise and good man might identify himself. The philosopher will separate himself from such a life as far as possible; and the high-minded man seems to be concerned with nothing greater than himself. For Aristotle the general movement of things towards perfection seems to be one that does not essentially depend on a unification of individuals acting under a greater agency. The highest, the rational, individual seeks his excellence least of all by entering into a unity of action with those around him. How far may we trace the absurdity of his high-minded gentleman and the one-sidedness of his philosopher to Aristotle's apparent blindness to any larger historical unity than those little Greek States that in his day seem to have deserved contempt?

26. The relation between historical and ethical construction is complicated by the fact that the former also is dependent in large measure on the latter. This is most obvious where the historian, as in the cases of Augustine, Hegel and Spencer, presents his historical construction in support of his ethical position. Augustine's history was certainly a fruit of his ethical attitude; though the latter would not have been adopted with decision until affirmed by the former.

The relation exists, however, even where the historian is writing of a past age, and without a pronouncedly ethical purpose. In the first place historical construction is seldom attempted unless the writer is profoundly, emotionally interested in the period. From Herodotus to Ranke or Green we see the historian starting with the conviction that he has got hold of a truth significant not merely for knowledge of the sequence of events, but also for the grasp of the meaning and purpose of events and for the will and action that follows therefrom. And, if we attribute moral excellence to men not more on the basis of their capacity to refrain from evil than on their ability to participate whole-heartedly in the good, the historian's insight is a moral quality, indicating the spirit and perhaps the direction of his own life. No better example is furnished than that of Green, the lover of peace. His history of the English people, he tells us, deals rather with the " missionary, the poet, the printer, the merchant and the philosopher," than with the mere warrior and courtier. Bryce's emphasis on the institutional unity that pervaded the " dark " and middle ages is the expression in part of his own moral constitution; these things are to him of more account in determining the right than they were to Carlyle, for example, or to Spencer. Motley and Grote in their histories of the Netherlands and of Athens, exemplify the same general fact. To the former the spirit of undying resistance to oppression was a sacred tradition; for the latter, a thoroughgoing democracy had moral worth. And each saw the unity of action that embodied what to them was of great ethical value.

It would be desirable to have a logical account of this reciprocal relation of ethical and historical constructions. The simple statement suggested by the immediate relation of past actions remembered to future actions imagined, that historical science furnishes the knowledge of the several actions with which the individual may put himself in relations of assent or dissent, while ethical science relates the ends or purposes of such actions in a logical system under some supreme end, is true so far as it goes, it seems to me; but the following statement is preferable, although in the attempt to describe the reciprocal relation above mentioned the matter becomes too complex to grasp in a single sentence.

The distinction between the two is expressible only in terms of starting points and directions. History starts from particular present facts, and from the particular past events that have brought about those present facts, their evidence. In this starting point there is a conviction that verification and universal agreement is possible through physical measurement of the evidence, and through subsumption of the connections between past facts and the evidence of them under universal laws. But in historical construction, even the simplest, there is a perception of individuality making unity among such elements, transforming them into parts of some single agent, the character of which is not subsumable under general laws. And the assertion of the existence of such individuals seems to rest on the insight and the genius of each historian. He convinces rather by eloquence than by argument. But right from the heart of the world of individuals in which the constructive historian moves, from the apparent congeries of nations and races and embodied tendencies of feeling and thought, of continents and planets, along with an atomic system conceived as moving together under a certain mathematical necessity, out of this confusion appears a certain order and necessary relation of these individuals, not yet brought into definite shape to be sure, but undoubtedly present. I refer, of course, to the fact that it is possible to mark out and define these great movements in terms of their goals or purposes, just as Kant succeeded in part in defining the movement of forms towards beauty, and again the advance of the nations towards a confederation of Reason or Justice; as Hegel defined in part the largely contemporary but distinct progress of political communities towards true Freedom; as Marx and Spencer have less adequately, perhaps, defined the economic development and the increase of life. Usually whoever defines such a field or goal of history sees all other realms of historical construction center around it. But now the demand seems to be that the historian keep a comprehensive view of all these and of other movements, and that he should note their teleological interrelations without assuming that one is central and supreme.

But the starting point of Ethics seems to be the idea of the good or of right, and it seeks to arrange thereunder such "goals" as beauty, freedom, justice, etc. And how can one hold *practical* ideals of the good unless he believe that these "goods" are the ends towards which actual movements tend, so that by his own action he may effect and support them? Thus he is driven, as Kant was in his "Idee," to ask whether history tells of such a movement; for nothing but history can. In the rendering practical of his ideals, then, the moralist tends towards study of the details whose existence as historical elements make it possible for him to map out a line of conduct connecting his ideal by not too abrupt a curve with the drift of things in the past up to the present.

The historian, whether the writer or the reader, moves away from the viewpoint common to all, through an individual insight which is to be tested by certain necessary relations of concepts, necessary and certain though only a few can think them. The moralist *starts* from the subsumption of those same or similar concepts under the idea of *the* good or universal end of things, asserting relations of value to exist between those concepts, and distinguishing one from the other definitely. But, his conceptual scheme, however certain it seemed to him, undergoes transformation as he, in his attempts to make it actual, tries to see the good, with its subordinated ideas, to be the real good of the world where he and others meet in common action.

In the field intermediate between the physical and the logical, where moralist and constructive historian do their work, it is certain that there is as yet little agreement. The greater unities of action to which I have referred, are not matters on which any two historians agree. But the definition and systematization of the corresponding concepts, begun by Augustine, was not renewed, I think, until the day of Kant. And, something has already been done, though, as I have tried to show, with an unfortunate tendency to narrow the conception of historical development in general, and with it the field of moral obligation. A true conception of the history of nature will convince that it is our duty to make our habitations contribute to the beauty of the landscape as truly, though perhaps not so urgently as it is our duty to relieve the suffering or to obey the law. And this extension, both of historical construction and of ethical life, should follow from a clear conception of the purpose of historical science, as indicated by the concept action.

With this somewhat obscure treatment of a question not yet thoroughly worked out, I close my account of the concept action. I hope I have made more clear the nature of the historical as contrasted with that of the mechanical view of the world, that I have shown that the term action indicates the starting point of our reflection on things and marks the direction of the organization of our knowledge as we learn to move freely in the world, freely in proportion as we realize and appreciate its purposes and adopt them as our own.

VITA

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